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RISK COMMUNICATION FOR COMPANIES

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Risk Communication for Companies:

Thriving and surviving in an age of risk

Foreword

The Concorde airplane falls burning out of the sky. A major tire company has to recall its entire production after a series of fatal automobile crashes. The I-Love-You virus, the H1 N1 pandemic and West Nile Fever all become household names. Despite, or maybe because of, all our technological achievements, society is as preoccupied with risk as ever – or even more so. Knowing this, the company that does not understand what "risk communication" really means may be heading, without a safety net, into disaster.

Discussions and decisions in the context of risk issues are interdisciplinary and must be tackled across boundaries of expertise. These issues transcend technical and scientific knowledge and touch upon questions of fundamental values which until now have been the preserve of decision theory, the legal and social sciences and philosophy.

Not surprisingly, an intensive exchange of ideas and an equally intensive reconciliation of opinions are essential in order to understand the complex correlations involved and to be able to make “acceptable” decisions and take “appropriate” actions. Communication between the experts in the diverse fields involved in the risk arena is just as important as is effective communication between experts and laymen and, ultimately, frank and open communication between those who initiate actions and those who are affected by those actions.

For any company or organization, a professionally implemented risk communication approach is an indispensable tool for preventing or minimizing and coping with potential business crises. In achieving this goal, the significance of risk communication lies in the constructive handling and defusing of risk-related conflicts between the business's stakeholders and shareholders.

Contents

This manual, "Risk Communication for Companies" has two objectives: - first, to explain the purpose and contents of risk communication, and, second, to provide guidelines for organizing risk communication within the reader's own company or organization. The interests of small and medium-sized enterprises are also given consideration.

Some elements of this Guidebook may also be suitable for adoption by public agencies or non-governmental organizations involved in “risk debates.”

The approach to risk communication presented here is based on the following observations:

1. Laypersons perceive risks differently than experts. Whereas experts primarily regard risks as chains of cause and effect subject to uncertainty, laypersons prefer to think of risks in social terms. They focus on the social concept of victim and perpetrator.

2. Experts identify five basic types of risk, each with specific implications for risk communication: the suspicion of hazard, possibility of an accident, exposure to a pollutant, evidence of damage, and the occurrence of an accident.

3. Laypersons similarly make distinctions between different basic aspects of risk, but these may well differ from the characteristics of the risk problem identified by the experts.

4. The purpose and inherent challenge of risk communication is to address these differences between the experts and laypeople in assessment and perception of the risk.

5. Overcoming these differences requires first and foremost a qualitative risk communication approach, which not only takes into account possible lack of trust but also attempts to establish appropriate channels for two-way communication.

6. How risk communication processes should be organized within the company will depend both on the size of the company and on the degree to which operations are exposed to risks. Problems in implementation are to be expected and should be anticipated.

7. Risk communication provides a measure of protection against potential crises. However, crises can never be completely ruled out and it is imperative to be prepared for such events.

The first chapter considers the need for risk communication. Who has to, and who ought to, engage in risk communication, and for what reasons? This chapter contains a risk communication audit tool, which can be used to determine the needs of an organization].

The second chapter presents the three building blocks of risk communication. These are the "quality of the relationship", "Information design" and "Shaping the dialogue". Effective risk communication must address all three elements.

The third chapter describes the steps necessary for building successful risk communication. These are: - analysis of the risk, selection of a suitable communication procedure, completion of a trust audit, and assessment of the core messages needed for qualitative and quantitative descriptions of risk.

Chapter four contains further information on crisis management and crisis communication. The individual building blocks of crisis communication and the recommended activities during the various phases of a crisis are described here.

The fifth chapter focuses on the organization of risk communication within the company or organization. It deals with strategic aspects, possible structural alternatives, and suggested solutions to implementation problems that may arise.

Finally, chapter six takes a look at the future of risk communication.

1 What is risk communication and what is its purpose?

Risks tend to spark off or catalyze conflicts. If recognized too late and poorly dealt with, such conflicts can cause harm to a company. Not just to its image, but its market share, profit, and earnings potential are also at stake.

As a consequence, companies must know – though they cannot rely exclusively on – the scientific and technical judgment of experts as to whether a risk is acceptable or not. Business must also take public opinion into account and must address the public's concerns promptly and in an appropriate manner.

Not only is efficient and effective risk communication in the company's or organization's best interest, but also increasingly statutes or regulations make it a requirement.

1.1 From risk to risk communication

Many controversies over technology, environment, and health-related questions are basically risk issues. The motto here is: you cannot afford *not* to communicate. If you are silent, you implicitly abandon the stage to others who may be less well informed or have interests opposed to yours.

Examples of risk issues currently in the public's eye:

- Are there hazards from the combustion of plastics in waste incineration plants?
- Can genetically modified foods have adverse health effects on consumers?
- Will burdens of soil contaminants from past activities cause problems?
- Do high-voltage power lines pose a health hazard?
- Do current permissible exposure standards for cell phones provide adequate protection?
- Is living in the vicinity of a chemical plant dangerous?
- What about dioxins in foods?

You must take a stand on the issues. The challenge is to respond to risk questions with answers that are both factually correct and concise. However, there is still the mistaken belief that risk communication is nothing more than the transmission of facts and data. This is a dangerous assumption, for risk communication deals with much more.
Risks are subjects of controversy. All risk issues contain an element of uncertainty, giving rise to conflicting views and interpretations. Indeed, scientific controversies are not rare. Questions of whether there is a risk or not, how serious it is, and what should be done to protect people's health and the environment are always associated with ethical, economic, and often even political considerations. These questions revolve around concepts of fairness and justice, of the distribution of costs versus benefits in using a technology, and of trust and credibility.

The need for business to communicate

Needless to say, companies and organizations must be proactive in identifying their risks, scientifically and technically evaluating them and ensuring that appropriate measures are taken to reduce the risks. In addition, however, companies would be well advised to inform the public of their findings and to take the initiative in addressing any fears the public might associate with the risk. This is particularly true for large corporations, but also applies to small and medium-sized companies. Companies must be committed to risk communication, because either a lack of risk communication or errors in communication can easily develop into a crisis for the company.

In many cases, some form of risk communication is mandatory. In the USA, the European Union, and other legislations, there are a growing number of laws and regulations that require companies, corporations, and agencies to have an active risk communication strategy and implementation plan. Examples include the recommendations for public involvement under the RCRA, the right-to-know requirements in SARA Title III, and the CERCLA requirements on community relations (see Table 1).

As early as 1987, the European Union (EU) Commission's 4th Action Program stressed the importance of risk information and called for stakeholders to be granted a say in risk management. The European Commission has implemented this requirement in various legal instruments. The "Agenda 21" program for implementing sustainable development (Rio Conference, 1992) also points in a similar direction. In 2000 The European Commission published its communication on the precautionary principle that underlines the need of adequate risk reporting. Furthermore, article 123 of the REACH regulation (2006) requires to provide guidance for the communication of information on the risks and safe use of chemical substances.

Why engage in risk communication?

- Risk communication is legally required. On a fundamental level, corporate social responsibility demands that companies communicate their risks. Indeed, this obligation is codified in various legal statutes and regulatory directives.
- Beyond simply satisfying rules and regulations, it's in a company's own best interest – economic and otherwise – to commit to risk communication in order to prevent or minimize public risk conflicts and business crises.

European Union	
Seveso II Directive (96/82/EC)	Information to the public concerning safety measures, Participation of the public in developing emergency plans
Environmental impact assessment (85/337/EEC)	Public hearing and information as part of the licensing procedure
IPPC Directive (96/61/EC)	Access to information and participation of the public in licensing procedures
Convention on the Transboundary Effects of Industrial Accidents (E/ECE/1268)	Participation in hazard prevention planning
Waste Incineration Plants Directive (89/369/EEC)	Information to the public about operations at waste incineration plants
Dangerous Substances Directive (67/548/EEC)	Instructions and information to consumers: e.g. requires labeling of dangerous substances
EU Water Framework Directive	Public participation, information to the public on water quality
DIN 33922 Environmental Management	Environmental reports for the public
DIN 33927 Environmental Management	Use of product life-cycle assessments in marketing, advertising
EC Communication on the precautionary principle	Structured approach, which comprises three elements: risk assessment, risk management, risk communication
REACH Regulation	Information of risks and safe use of chemical substances
ISO 31000 Risk management standard	Emphasizes the role of risk communication
Germany	
Closed Substance Cycle and Waste Management Act	Information to the public regarding minimization and recycling of waste
Federal Pollution Control Act (BimSchG)	Public participation in licensing procedure
Environmental Impact Assessment Act	Involvement of the public
Land-Use Planning Act	Land-use planning procedure, involvement of the public in town and country planning
Hazardous Incident Ordinance (12th Ordinance implementing the Federal Pollution Control Act BImSchV)	Information to the public about safety measures and what to do in the event of an accident
Incinerators Ordinance (17th Ordinance	Information to the public on the results of

implementing the Federal Pollution Control Act BImSchV)	emissions monitoring
United States	
CERCLA (Comprehensive Environmental Response, Compensation and Liability Act), 1980	Community relations plan (incl. public involvement) for hazardous site cleanup
NEPA (National Environmental Policy Act), 1969	Informing community about environmental impacts of "major" federal actions
OSHA (Occupational Safety and Health Act), 1970	Informing workers about chemical etc. hazards at work
RCRA (Resource Conservation and Recovery Act), 1976	Encourages public involvement and information (on hazardous waste)
SARA (Superfund Amendment and Reauthorization Act], Title III (EPCRA), 1986	Community right to know about hazardous chemicals, emergency plans

Table 1: Selection of legislation with a bearing on risk communication

1.2 Experts and laypersons: two perspectives on risks

Conflicts arise when different societal groups differ in their opinions about whether a risk exists, how serious it is, and whether the existing safety measures are adequate.

Risks from the expert viewpoint

Experts regard risks as indicators of hazard potentials. Risk assessment involves answering four questions:

- Is there a potential risk and what is its nature?
- What dose will induce a harmful effect?
- Who is exposed to what dosage?
- How significant is the risk?

Fig. 1 shows the challenges associated with assessing risks, and what - in the view of the experts - the assessment ought to take into account.

For the experts, the crucial point is whether and with what degree of confidence the risk can be assessed. To meet these criteria, experts need scientific evidence that a harmful, i.e. toxic, effect exists. Without evidence, anything and everything could be suspected of causing a risk.

The expert is interested in the details of the risk. Is it a low-dose, long-term exposure risk resulting from normal plant operations, or is it a short-term accidental release risk? If the latter, what is the frequency with which these accidental releases may occur? If it is the former, it will be necessary to determine the level of emissions and the pathways by which the pollutant reaches the receptors.

Experts consider whether the pollutant can accumulate in the environment and how long it retains its harmful effect. Next, exposure must be assessed. Who comes into contact with the pollutant, by which exposure routes does the pollutant enter the body, and can it accumulate within the body?

Finally, there is the question of the potential health effects and the toxicity of the pollutant. Taken all together, these specific characteristics allow experts to distinguish between certain categories of risk problems, which will be discussed in more detail in Chapter 3.1.

An important consideration is whether or not the pollutant exhibits a threshold effect, below which it is not harmful. If a threshold exists, permissible emission limits can be developed. If there is no such threshold, the goal is to minimize the emissions.

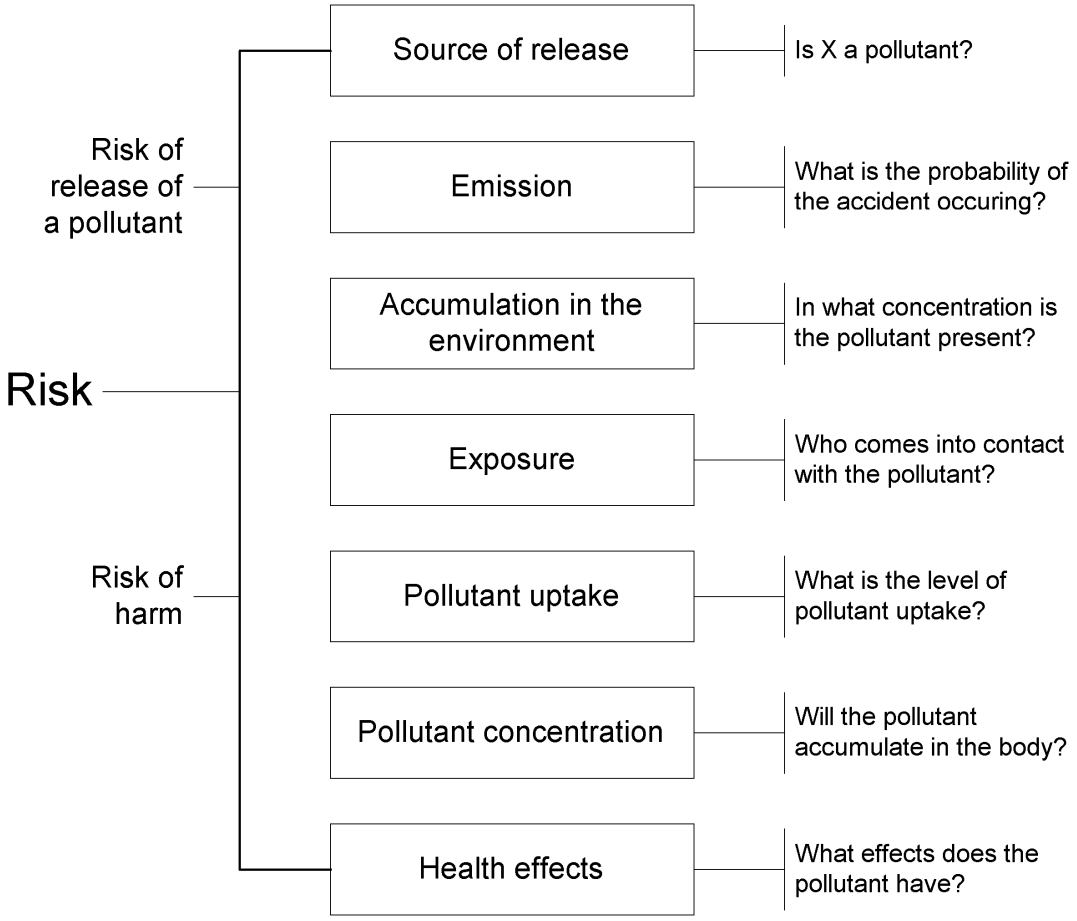

Fig. 1: Risk from the expert viewpoint

Risk from the layperson's perspective

Laypersons approach questions of risk differently than experts. Of course laypersons are also interested in the possible consequences. However, they perceive risks primarily in a social and relationship-oriented context. Risk statistics such as estimates of probability are less important or take on a different meaning. Laypersons transfer questions of risk into their framework of perception of the routine events of everyday life. This perspective is based on common patterns for interpreting events, which are heavily influenced by the media, such as scandal stories, investigative exposés, tragedies, and disaster reports. Such interpretive patterns include:

- casting the implicated persons in particular roles - preferably those of victim and perpetrator, hero or villain, etc. (characters involved)
- ascribing objectives and motives (intentions)
- exploring the conflict leading up to the event (dramatization), attributing a logic to the event
- describing the consequences (harm done), and formulating a conclusion or lesson to be drawn (moral of the story)
- citing other "examples" which make the occurrence of the event or the moral of the story particularly clear (citing precedents).

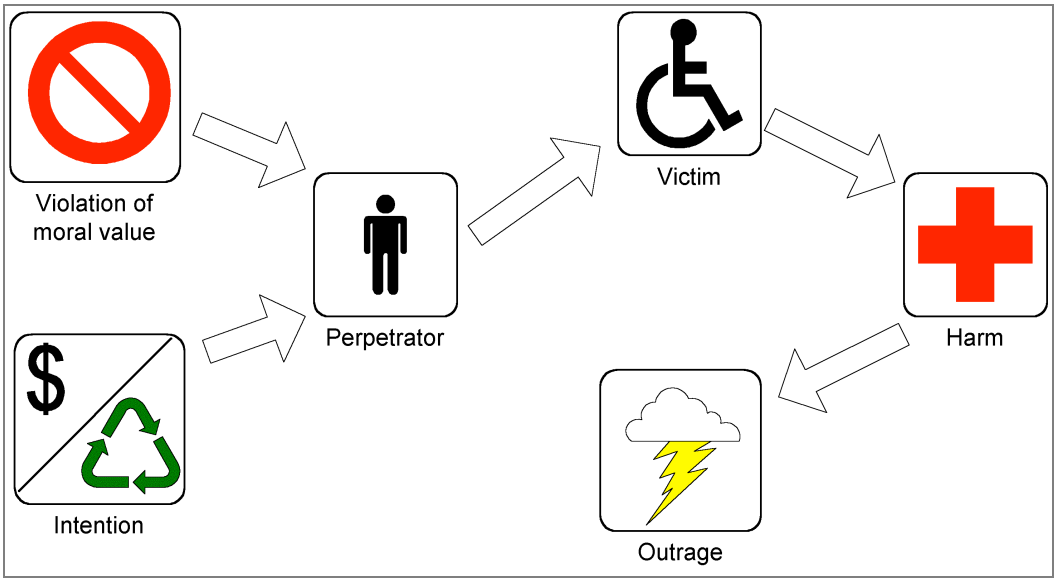

Fig. 2: The layperson's view of risk

Thus, laypersons look for elements that play no part in a scientific risk assessment and would indeed be considered completely unsuitable for scientific discourse. Yet, from the layperson's perspective, these elements are of crucial importance in perceiving and understanding risks.

These story elements form the basic building blocks of the way laypersons view risk issues. Assembled together, they form the typical patterns for interpreting and discussing risk issues from the layperson's perspective. Some of these outlooks are so widely held and established that they can be epitomized with popular phrases:

For example:

- *"Things can happen sooner than you think"*
- *"Who is to say there isn't...?"*
- *"We are all victims already"*
- *"Don't let them get away with it!"*
- *"It was bound to happen sooner or later"*

"Things can happen sooner than you think"
The theme of this interpretive pattern focuses on the chance an accident could happen or on the possible harmful outcome, e.g. industrial plant or transportation accidents. This argumentation is loosely based on the logic of Murphy's law, or more specifically on the idea of "What if …". Information on probabilities are interpreted in the context of this chain of logic.

Examples which are cited as a precedent are highly important. Emphasis is also placed on the traits of the characters involved such as reliability, prudence, sense of responsibility, "human error", etc. on the one hand, and blind trust, indifference, or fear and worry, on the other.

"Who is to say there isn't ...?"
This argumentation pattern focuses on the assumption that there is a risk. Although there is no sound evidence, there are suspicions or indications that there could be a risk. "Couldn't Compound X be bad for you?" is a typical question. A current example of this pattern is the debate about the possible harmful effects of electromagnetic fields (EMF) on human health. The risk is presented in the form of a suggestive story with a corresponding event logic ("It could be ..."), precedents ("It took ages for asbestos ..."), suspicious circumstances and potentially incriminating factors ("Have you ever wondered why ...?") and ulterior motives ("All they are after is a fast buck").

"We are all victims already"
This pattern of interpretation assumes that a hazardous substance is already present in the environment and it is only a matter of time until it causes harm. An example of this pattern is the controversy about amalgam tooth fillings. It is assumed that the victims are exposed to a toxic substance. But the harm has not yet been recognized or will take some time to manifest itself. The logic behind this pattern is "perhaps not yet, but any time now".

"Don't let them get away with it!"
This interpretive pattern not only assumes that harm has been caused, but also claims to have identified the cause of the harm. This pattern typically takes the form of a scandal story. Although the cause of the harm is believed to be known, nothing seems to have been done to stop it. Examples of this pattern are people who are hypersensitive to electricity and blame EMF for their problems, or Multiple Chemical Syndrome patients who regard chemical substances as the root cause of their complaints. Here moral attributes ("irresponsible", "inconsiderate", "acting against one's better knowledge", etc.) are used to characterize the players. Overall, this pattern is marked by outrage and appeals for action.

"It was bound to happen sooner or later"
Typical for the response to a disaster, an accident, or some unfortunate outcome, this argumentation follows the event logic of a tragedy. That is to say, the circumstances are interpreted in a way that makes the catastrophe appear to have been inevitable. Attention is focused on describing the suffering of the victims as well as the motives of those who caused the tragedy, either knowingly and deliberately, or through their negligence. A textbook example of this perception pattern is the Chernobyl disaster.

1.3 Risk Communication: Conclusions for Companies

Effective risk communication must address both the expert's as well as the layperson's perspectives and approaches to characterizing risks. What is at stake is the extent to which the risk issue could become a critical business factor. Even a "minor" risk can develop into a serious problem for a company, even to the extent of putting it into a business crisis.

While there are many examples of such unfavorable developments, perhaps the most prominent is the widespread unease about nuclear technology. Of concern for business is the potential for mobilizing public concern, specifically the questions of how rapidly, on what scale, and among which societal groups the risk issue could develop into a problem. To address this the following questions need to be considered: Who or what is - or could be - affected, and to what extent? Is there already evidence of damage, and is the company to blame for it? What options are open to the company for ensuring that the stakeholders' perceptions and assessment of the risk problem are based on a full understanding of all available facts? How legitimate is it to exercise this kind of influence?

Fig. 3 presents an idealized risk issue lifecycle, divided into four phases. In the latency phase, the risk issue is not yet a subject of public discussion - it is only of interest to a small circle of experts. In the emergence phase, the risk issue surfaces in public discussions, i.e. it can evolve into a "problem". A critical event (e.g. a plant accident) can intensify the problem into a crisis. This is when public attention reaches its maximum. In the subsequent regulation phase, the risk becomes the subject of negotiated agreements, e.g. official regulations.

Risk issues arouse societal concerns, which, through public opinion, can develop into crises for a company and limit a company's ability to act.

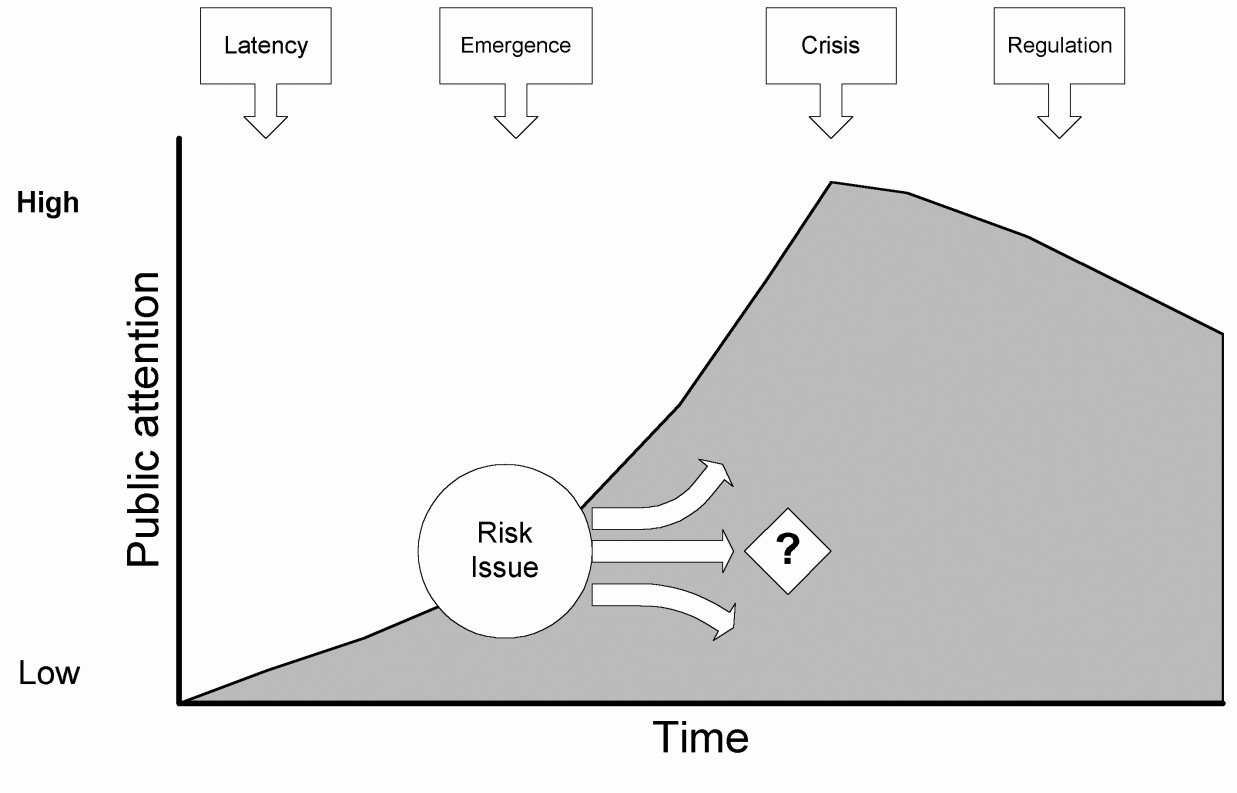

Fig. 3: Lifecycle of a risk issue

The capacity of a risk issue to evolve into a problem is influenced by a number of factors (see Table 2). These characteristics determine to what extent a risk issue is likely to attract public attention and to what extent it may become politicized. It is important to note that this progression depends more on the perspective of the layperson than on views and assessments of the experts.

Once on its course, the company or organization is less and less able to have an influence on the risk issue. Communication can only be successful if attempts are made to contribute to the debate as early as possible in the emergence phase.

Various societal groups may be involved at different stages of the lifecycle. From the viewpoint of a company, the most important groups to address in risk discussions are:

- Political interest groups and government
- the company's own employees
- affected persons, e.g. nearby residents
- media (local, regional, and national)
- industry press
- the interested public and citizens' action groups
- environmental and consumer activist organizations

- the company's clients and suppliers
- insurance providers

Risks develop into problems if ….	Example:
• they are easy to understand and have a link to existing beliefs	• Slogans and metaphors are coined, e.g. "Save the Whales" or "Split wood, not atoms"
• they contain dramatic elements	• A scandal or accident occurs
• the people affected are identifiable	• "Victims" are visible, e.g. leukemia cases
• they are located nearby	• Consequences for the neighborhood
• somebody to blame can be found	• Companies or organizations are taken to court
• there is a strong support group	• Environmental activist organizations take an interest in the risk issue
• there are low-risk alternatives	• e.g. Regenerative fuels instead of nuclear power
• opinion-leaders support the view of the problem	• Teachers, doctors, clergy
• the media takes an interest	• Articles in national newspapers
• the risk can be politicized	• Political parties take an interest in the risk

Table 2: Factors in the development of a risk issue

When the problem goes critical: a risk becomes a crisis

The defining moment in the lifecycle of a risk problem is the occurrence of an accident or other critical event that causes harm to people or the environment, or at least is perceived to do so.

The public reaction to such critical events and, therefore, their potential impact on the company depends on how this critical event is interpreted. Here again, perception is crucial. The left column of Fig. 4 shows different "perceived causes" of harm. The core question is who or what was responsible for the harm. Does the company have to be held responsible, or are external factors beyond the company's control to blame? The right column shows the reactions which can be expected, depending on how the cause for the problem is interpreted by the public.

Companies have to expect serious consequences, up to and including a business crisis, if they are perceived as being responsible or if they knew and condoned the risk, in spite of it being perceived as intolerable. The situation is completely different if the companies themselves are perceived as being the victims of aggression or a natural disaster. Fig. 4 presents the details of this relationship. In chapter 4, we will explore how crisis communication should be structured for each of these different circumstances.

Problem interpretation in crises and public reaction

Problem interpretation	Reaction
▪ External cause (e.g. natural disaster)	➢ Sympathy/pity
▪ Inadequate knowledge (e.g. unforeseen or unforeseeable consequence)	➢ Understanding, if everything possible has been done
▪ Negligence (carelessness; not knowing the knowable)	➢ Refusal to accept, calls for improvement
▪ Inherent in system (purely bottomline-oriented)	➢ Protest and anger, demands for stricter regulation
▪ Deliberate acceptance (e.g. suppression of information)	➢ Outrage, calls for tight control

Fig. 4: Problem interpretation and public reaction

1.4 Risk communication audit tool

Every company should know and periodically check the extent to which it needs to engage in risk communication. The audit tool presented here aims at:

- assessing the existing potential for exposure to risk issues using Table 3
- determining the sensitivity towards risk issues for the company's specific operating environment using Table 4
- reviewing the risk culture within the company using Table 5.

The assessment criteria presented here are solely a guideline and should in no way be considered exhaustive or conclusive. The assessment should be made in qualitative terms, since the overall picture of the "susceptibility to risk" can be gained only from a broader overview. Analyses of the company's strengths/weaknesses and opportunities/threats can then be performed to determine the appropriate actions that should be taken.

Questions	Examples	Assessment
▪ Are incidents/accidents possible?	➢ Production and handling of hazardous substances in large quantities	
▪ Are the risks imported from suppliers known?	➢ Dioxins in animal feed	
▪ Is there a danger of harm to the environment and/or health from normal operational releases?	➢ Emissions and residues from production	
▪ Are there any risks involved in using and disposing of products?	➢ Persistent substances	
▪ Do emissions constitute a nuisance (but not a health threat) to nearby residents?	➢ Dust, noise, odors	
▪ Could the soil be contaminated from past production processes at the site?	➢ "Inherited" contamination	
▪ Is an impact on agriculture likely?	➢ Effects on vegetable or animal production	
▪ Could property values in the community suffer?	➢ Damage to or loss of value of surrounding buildings	
▪ Is there knowledge of previous environmental damages around the site?	➢ "Inherited" contamination, past land uses, presence of other hazardous plants.	
Summary assessment		

Table 3: Assessing exposure to risk issues

The more questions are answered in the affirmative in Table 3, the more the company has to count on being involved in risk debates. This is because there tends to be a direct relationship between the number and extent of the potential risks within the company and the probability of the public becoming aware of these potential risks. And the greater is the need to communicate appropriately in order to build a sound foundation for effective risk

management. Needless to say, if the answer to some of the questions is simply not known, that may point to a lack of information that should be addressed. Ignorance, or more precisely, “not knowing the knowable” does not make for an effective risk communication strategy and is likely to be interpreted as a negligent attitude.

The following checklist relates to the sensitivity to risk of the company's specific operational environment. If the sensitivity is high, even fairly small potential risks may develop into serious problems.

The more questions are answered in the affirmative in Table 4, the more the company must assume that even small risks may become risk problems. The extent of the sensitivity to risk issues determines the probability that the company will be confronted with a risk debate, and, thus accentuates the need for risk communication.

Questions	Examples	Assessment
▪ Does the company operate in a risk-sensitive business sector?	➢ Chemical industry	
▪ Is the public fearful of the substances used in production?	➢ Radioactive materials	
▪ Are there debates about risks that could "carry over" to the company?	➢ Debates about EMF fields, if electrolytic processes are used	
▪ Is the risk potential at the site judged to be too high overall?	➢ Several hazardous plants in the vicinity of the site	
▪ Is the site thought to be affected by past contamination?	➢ “Inherited” contamination, past landuse damage	
Summary assessment		

Table 4: Sensitivity towards risk issues of the company’s operational environment

The last checklist explores the company's corporate culture, or, to be more precise, its attitude towards risks and how it deals with the public. These factors determine which obstacles to risk communication within the company must be overcome.

The more questions are answered in the affirmative in Table 5, the greater the need for the company to improve its communication processes.

Questions	Examples	Assessment
▪ Does the company consider itself "invulnerable" regardless of how public opinion sees it?	➢ "We are too big/too small – nothing can happen to us" attitude	
▪ Is communication considered an afterthought within the company?	➢ Communication is an unnecessary luxury – we need to concentrate on the real problems	
▪ Does the company believe that it is far too small to become involved in a public debate?	➢ Crises affect only big businesses that are in the public eye	
▪ Is it assumed that accidents can be positively ruled out?	➢ "Accidents are inconceivable" attitude	
▪ Does the company have no contact with the press?	➢ Never held a press conference	
▪ Does the company have no contact with environmental and consumer activist or community action groups?	➢ Never held a meeting with an environmental activist association	
▪ Does the company have little or no contact with the local population?	➢ Never held an open day	
▪ Lack of employee support for the company	➢ Employees worried/afraid about products and production processes	
Summary assessment		

Table 5: Risk culture within the company

Results from Tables 3 to 5 or similar self-evaluation instruments can be compiled in a SWOT[1] analysis. Figure 5 shows a typical matrix that can be constructed.

The matrix compares the external threats and opportunities with the company's internal strengths and weaknesses as a basis for deciding what can be done to:

- avoid the threats by building on the strengths
- expand the opportunities by consistently exploiting the strengths
- avoid the threats by eliminating the company's own weaknesses
- improve the opportunities by reducing the company's own weaknesses

	Company:		
		Strengths List the 5 most important strengths	Weaknesses List the 5 most important weaknesses
Operational environment	Threats List the 5 most important threats	How can the strengths be exploited to overcome the threats?	How can the weaknesses be eliminated to respond better to the threats?
	Opportunities List the 5 most important opportunities	How can the strengths be used to seize the opportunities?	How can the weak-nesses be overcome to seize the opportunities?

Fig. 5: SWOT Analysis

SWOT Analysis example:

Strengths/threats:
Expand existing good relations with the local press to be able to issue crucial information quickly in the event of an incident.

Strengths/opportunities:
Build on the existing risk management system to achieve a leading position in environmental protection.

Weaknesses/threats:
Improve procedures for managerial availability so as to be able to provide information to the media in the shortest possible time in order to pre-empt speculation after an incident.

Weaknesses/opportunities:

1 SWOT stands for strengths, weaknesses, opportunities and threats

Make better use of the as-yet unrealized opportunities for actively informing the public of the company's own environmental protection and risk management activities.

Highlights of Chapter 1

1. Experts and laypersons perceive risks differently. Experts see risks as possible chains of cause-and-effect. Estimates of the probability of harmful effects play a cardinal role. Laypersons, on the other hand, see risks in social contexts.

2. The layperson's perspective determines what kinds of links are made between the risk and the company, and what image the company attains in public opinion.

3. Companies should be aware of and remember the different risk perspectives and take them into account in their risk communication efforts.

4. The necessity for companies to communicate, especially about risk issues, is increasing. In practice, however, the company must identify its own communication needs and determine the scope of communication to be implemented.

Despite the best intentions and careful risk management and risk communication efforts, incidents or product defects cannot be ruled out. The company must be prepared for these and other crisis-triggering events.

2 The building blocks of risk communication

Risk communication is more than just conveying the results of risk assessment in an understandable way. How these results are perceived and understood depends on the nature and quality of the relationship between those involved. Without a solid basis for communication, risk information will simply be meaningless. It is therefore essential to create this foundation.

Information on risk and the way it is conveyed must be tailored to the stakeholders' needs, interests, and level of knowledge. It has to link up with their perspectives, that is, with the way they look at risk. Only in this context will quantitative risk information make sense.

Risk communication is not a one-way street. It takes place as a dialogue between different players with different interests and different ways of looking at things. This dialogue cannot be completely controlled by either side, but it can be shaped. The potential for shaping the dialogue is what this chapter is all about.

2.1 The building blocks of risk communication - an overview

The goals of risk communication are to discuss risks, to conduct a fair and facts-oriented debate about differences in risk assessment, and to find solutions to conflicts about risks. It would be a mistake, however, to believe that all these goals could be achieved just by supplying information about risks. In fact, success depends on each of the following building blocks:

- The quality of the relationship between those involved
- The design of the information
- Shaping the dialogue.

Without this foundation, risk communication is, at best, just patchwork, and at worst, ineffectual.

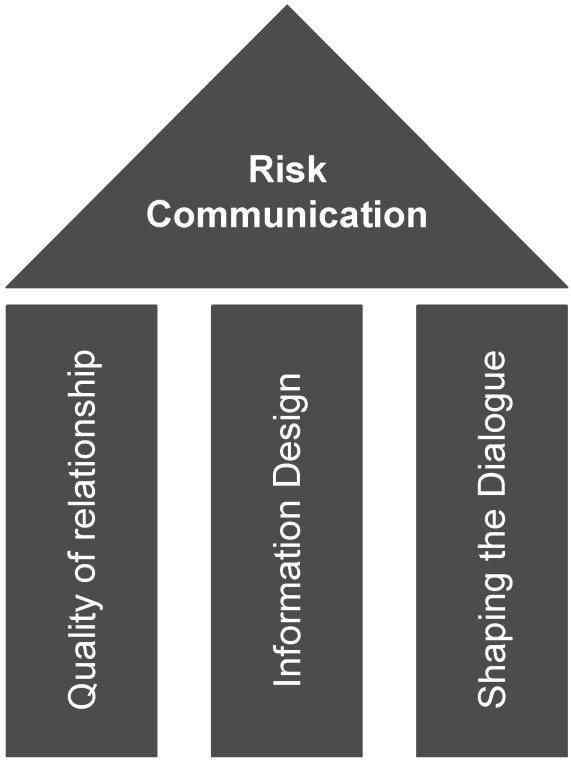

Fig. 6: The foundations of risk communication

In social terms, the aim must be to enhance the quality of the relationship between all those participating in the communication, i.e. to develop the social climate for talking to each other. This means that perception patterns, images and self-images must develop in a way that helps

to establish a foundation for proper understanding and productive debate. As long as communication is characterized by distrust and hostility, no objective discussion is possible at all.

In terms of substance, the aim is to communicate facts and knowledge. It is important to convey information about the type of risk issue concerned, to minimize differences in the ways of looking at the risk, to provide aids to evaluating the risk, to answer questions, and to deal with objections. In all cases, however, the indispensable prerequisite is that the audience trusts the company. Only if this trust is present will it be possible to get any message across. The specific type of information needed will depend on the particular risk problem and the audience's risk perception.

Ultimately, the task is to actively shape the risk dialogue and to develop and set up suitable organizational forms for its implementation. In this context, there are a number of procedures for enhancing participation in the dialogue, that is, for engaging in two-way communication. The minimum level of participation in two-way risk communication involves giving the intended audience the opportunity to present their viewpoint and to ask questions. The maximum level consists of allowing all stakeholders to actively participate in the decision-making process .

What decision is made about the level of public participation in the risk communication process will depend on the issue at hand, the competence of those concerned, and the trust placed in them. This means that trust is necessary on both sides. The communicator needs the trust of all other stakeholders in order to get the message across. Equally, the other stakeholders need the trust of the decision-makers if they are to play an active role in the decision-making.

2.2 Building block 1: Quality of relationship

The effectiveness of risk communication is critically dependent on the quality of the social relationship between all the stakeholders. In this context, the various stakeholders' own interests, the intentions each attributes to the others, their previous experience in dealing with one another, and their fundamental attitudes and world views (see "Two Perspectives on Risk", Chapter) all play a role. Metaphorically speaking, the social relationship either takes the form of fertile soil in which the content of the communication can thrive, or barren ground in which this content shrivels and dies. It is at the relationship level that the crucial interpretation patterns evolve, on the basis of which information about risk is perceived and understood. It is at this level that the signals are set for the direction the risk communication is going to take. The quality of the relationship depends on the answers to questions such as:

- Do the participants perceive the communication as open?
- Is the information flow transparent?
- Are the options for shaping the communication fair to all participants?
- Does my communication partner see my position as serious, credible and reliable?

The objective in shaping the quality of the relationship is to build up a bond of mutual trust between the stakeholders. Without trust, risk communication is ineffective. Distrust - whether justified or not - is a filter that blocks out everything that does not coincide with one's own opinion. All efforts to explain one's own viewpoint and all attempts to conduct a dialogue are then in vain.

We can distinguish between two types of trust. One person trusts another, e.g. to provide help in an emergency. However, trust can also be placed in the expectation that events will take their proper course. Examples here are the trust placed in political parties, in the stability of a currency, or in science.

Trusting means being able to rely on:

People: Trust in specific persons that they will act responsibly

Processes: Trust in the quality and validity of risk analyses and in the fairness of dialogues (round table discussions, etc.)

Risk communication depends on trust in the accuracy of data and facts. It also involves trust in the company not only to pursue its own interests, but also to show concern for public well-being and to deal fairly with other groups. In other words, competence, fairness, and good corporate citizenship are in the spotlight here.

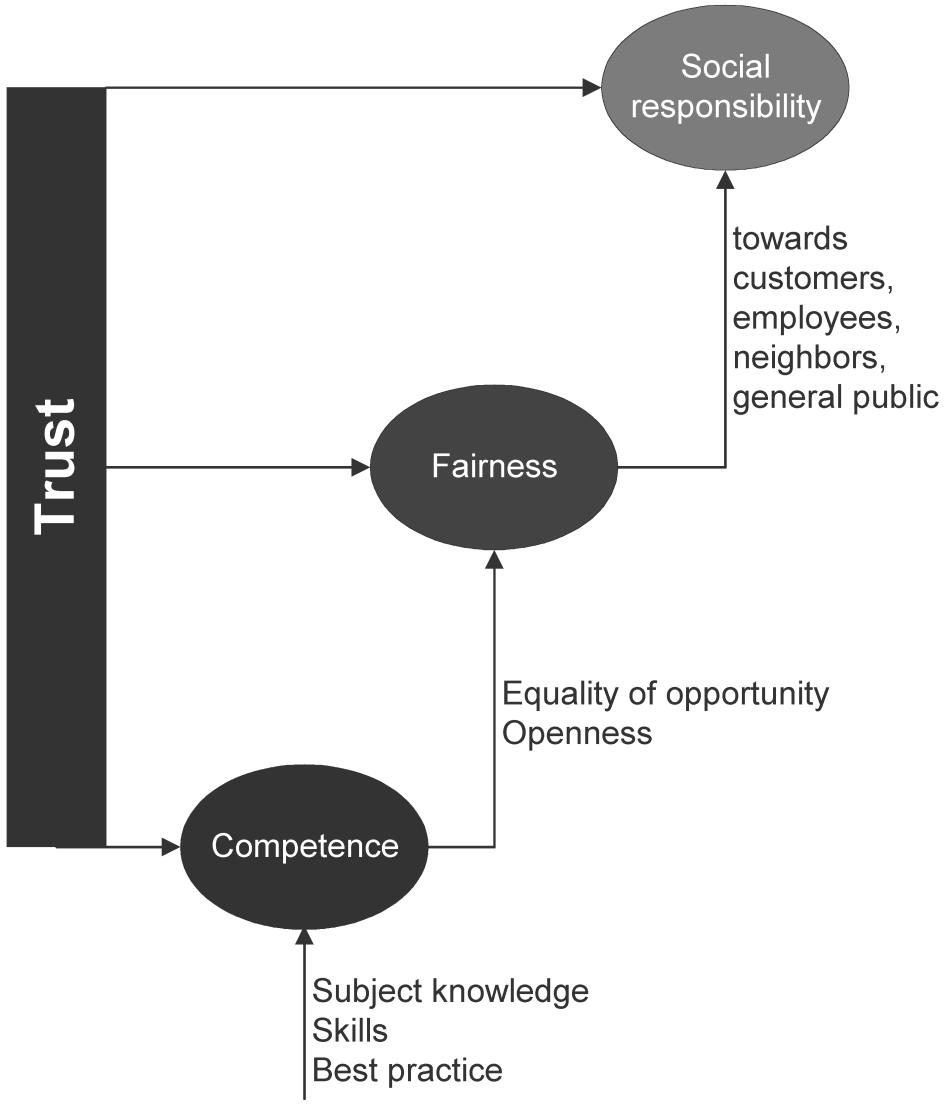

Fig. 7: Components of trust

2.3 Building block 2: Information design

Conveying information and knowledge about risks forms the material core of risk communication. This involves the following tasks:

- to identify the key communication problems for the particular risk (what do I need to communicate?)
- to keep in mind the other parties' risk perspective (what questions must I be able to answer?)
- to describe the risk in both qualitative and quantitative terms (how should I communicate facts or answer questions, and which ones?)
- to use appropriate suitable comparisons to give a better understanding of quantitative risk descriptions (what comparisons can I draw to make the risks clearer?)

Risk communication as a means of conveying information and knowledge has two objectives. Firstly, it aims to facilitate more accurate assessment of the risk by making information available, correcting misunderstandings, and providing aids to evaluation. Its second objective is to provide feedback on public perception of the risk and to address the issues raised within this context. For details, see chapter 3.5.

To achieve these aims, the same good communication practices must be used as apply in other communication fields: for example, keep to the point, and be clear and intelligible.

This implies not only formulating tailor-made risk messages, but also choosing suitable information channels and giving the right information at the right time.

2.4 Building block 3: Shaping the dialogue

Fig. 8 gives an overview of the procedures that can be used to shape a dialogue. These procedures differ in terms of the privileges they grant to members of the public or interest groups. These rights range from the right to receive and to seek information, up to the right to participate in decisions.

In the first stage, the public is given the right to information (the "right to know"). For example, people are informed about projects ahead of time and are able to inspect the associated documentation. Information should be provided actively, not just on request (stage 1). This kind of communication is legally required in many contexts, e.g. for "Superfund" hazardous sites in the USA. A more comprehensive form of communication seeks out the concerns of the stakeholders and specifically addresses their wishes, worries, and expectations, e.g. about the suitability of the site for a planned installation (stage 2). Finally, the highest attainable level of risk communication is to provide opportunities for public participation in decision-making (stage 3).

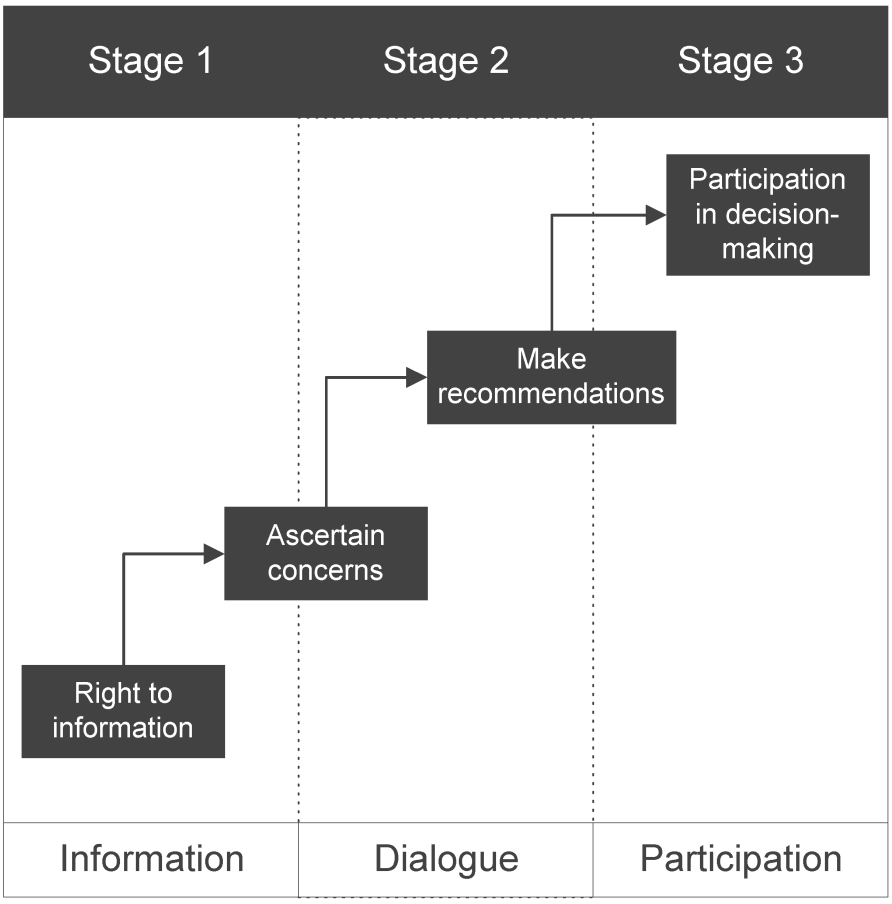

Fig. 8: Procedures for shaping dialogue

Procedures for actively providing information to the public
The usual method for providing the information required by members of the public in order to understand an issue is to allow them to inspect the planning documents and/ or operational records. However, technical information is usually difficult to understand, and the layperson will require a lot of time in order to locate the aspects that they are interested in. Other measures are therefore necessary. These could be informative brochures, lectures by experts, giving the public opportunities to question the experts, on-site information stands, or visitor days.

Procedures for finding out about citizens' concerns
One important step in communication is to identify public perspectives, attitudes, concerns, and fears. Knowing these will help in matching risk communication to the public's needs. It also helps to tone down the conflict or to avoid one completely, if the risk issue is still at an early stage of development. There are various ways to ascertain the public's concerns.

Focus groups
Focus groups are discussion groups chaired by a facilitator. Using a loosely structured set of questions for guidance, the facilitator stimulates a discussion on a selected risk topic. There are no restrictions on the participants. They are free to give their opinions and views on the points discussed. In this way, a picture of their risk perception can be constructed and key points identified for risk communication.

Surveys
Surveys are usually based on standardized questionnaires. These are either filled in by an interviewer in face-to-face contact with the interviewee, or can be mailed, or used as the basis for a telephone survey.

Procedures for formulating options and making recommendations
A further option for shaping dialogue is to invite the public to participate in evaluating alternatives and in making recommendations for decision. This involves not just exchanging information, but active debate between different viewpoints.

Such procedures can be judged by the extent to which they promote fairness and the acquisition of knowledge. Fairness means that everyone is allowed the same right to participate, the same access to information, and the same opportunities to discuss and assess decision options. Knowledge refers in this case to the knowledge required for assessment of the risk.

Citizens' juries
In a citizens' jury, selected citizens are charged with making recommendations on a particular subject of current concern. A random representative sample of about 15 to 25 citizens is usually selected as a panel or "jury". The aim of the jury is to draw up a citizens' opinion report on the problems presented. The jurors are paid expenses for their efforts. Further costs may

arise if the jury calls in experts to assist it in becoming acquainted with the subject matter. This is one way of enhancing the jury's expertise.

Advisory board
An advisory board generally comprises representatives of different stakeholder groups in society. Any group affected or interested in the procedure can participate. This serves to fulfill the criterion of fairness. The board generally has some specialist knowledge. In this case too, calling in experts can enhance competence.

Procedures for public participation in decisions
Procedures in this category go beyond a simple dialogue. They are aimed at actually involving the public in the decision-making process. This requires the participants to be sufficiently well informed to be able to make a competent contribution to the process. Any gaps in the information available to them must be filled in: all the relevant facts must be on the table. In addition, it may sometimes be necessary to arrange workshops with experts, in order to enable all participants to form a competent opinion.

Exchanging opinions and viewpoints also plays an important role. This helps to explore the topics and to sound out the arguments and interests of the participants. In such situations, all participants must be given equal opportunities to present their positions, the interests behind these positions must be noted, and efforts made to identify common ground.

The cardinal concern of such procedures is to arrive at a negotiated solution. A number of approaches are possible here, from a round table right up to calling in a neutral third party to assist in the discussions and negotiations.

Requirements for a neutral third party:

The neutral third party must be
- non-partisan
- acceptable to all participants
- sufficiently well acquainted with the subject matter
- skilled in handling conflicts

Finally, in some cases steps may have to be taken to balance the confidentiality of the talks against the need to inform the public. This applies especially to conflicts that have a high intrinsic level of public interest.

Highlights of Chapter 2

1. Risk communication is based on three building blocks, all of which must be present: the quality of the social relationship, the design of the information and the shaping of the dialogue between the participants.

2. Risk communication depends on a positive appraisal of the competence, fairness, and social responsibility of the partners in the communication process, and ultimately leads to mutual trust. Without such a positive appraisal, risk communication is bound to fail.

3. The aim of conveying information and knowledge is to close the gap between the actual problem inherent in the risk, and the way the risk is viewed. To this end, it is important on the one hand to get across the facts that are material to an understanding of the risk, and on the other hand, to address the questions posed by the public.

4. Risk communication requires a dialogue between the participants. One-sided dissemination of information that takes no notice of the concerns of the other side is not a basis for successful communication. There are various opportunities for shaping the dialogue in a constructive fashion.

3 Steps in risk communication

3.1 Analyzing the risk type

3.2 Developing procedures for shaping the dialogue

3.3 Performing a trust audit

3.4 Addressing core risk communication topics

3.5 Describing the risks

3.6 Comparing risks

A systematic approach to risk communication consists of six steps. The first three steps lay the foundation for the subsequent steps of implementing risk communication. The first task is to establish the basic situation: What is the type of risk in question and what is the key information which has to be communicated? The next step is to identify the audience for the risk communication, including their positions, perspectives, and interests. Who do we need to communicate with and why? Another important aspect is "How?", in other words, what form of dialogue should be chosen? Following this, the next task is to carry out an assessment of the level of trust that the other stakeholders have in the company.

Once these questions have been addressed, the core messages of the risk communication effort have to be defined. These should cover all the information that is important for understanding and assessing the risk. The social contexts in which people perceive the risk play an important role here. The aim is to minimize the difference between the expert assessment of the risk and the way people view it. Only when this has been achieved can quantitative risk information be conveyed. The final step is to select risk comparisons suitable for illustrating the quantitative risk information.

3.1 Analyzing the type of risk at hand

First of all, it is important for the company to identify the types of risk which are, or could be, associated with the situation at hand, e.g. constructing a new industrial plant. Five basic risk types can be distinguished in this context.

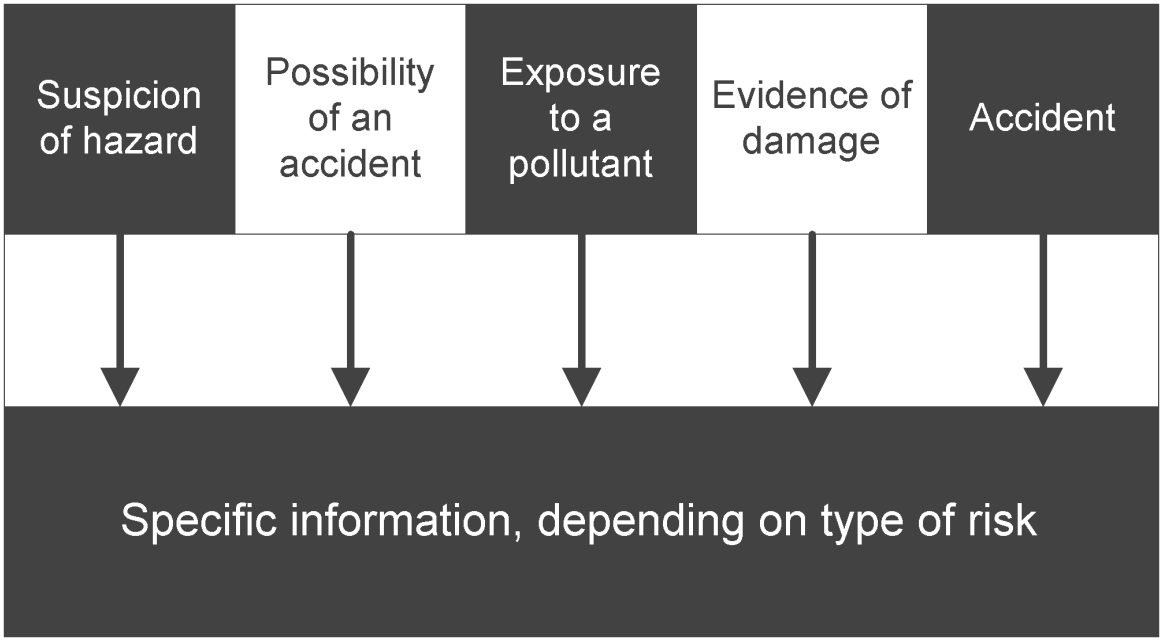

Fig. 9: Types of risk

Suspicion of hazard
In the case of the first risk type, "suspicion of hazard", it is assumed, but not proven, that a certain substance has harmful effects on human health or the environment. A case in point is the discussion about whether chemicals in the environment affect the hormonal balance, where it is assumed that even minute amounts can have a serious impact on gender-specific prenatal development. Such a suspicion can lead to even stronger public reactions than the possibility of an industrial plant accident.

Possibility of an accident
The possibility of an accident, e.g. in a chemical plant or waste incinerator, is the next risk type. Communication challenges for this type of risk may arise, for example, if a company is looking for a site for a new plant. The issue centers around how probable an accident is and what effects it might have. Different public reactions should be anticipated depending on the probability and the magnitude of the possible damage and the particular perspective on the risk.

The primary question here is whether the risk is purely theoretical ("It could happen…"), or whether there are sufficient grounds for suspecting that a risk actually exists (It's been shown that …").

Exposure to a pollutant

Exposure to - in other words, coming into contact with - a pollutant is another type of risk. One example would be the realization in 1978 that an old chemical dump under homes at Love Canal, New York State, was leaking. In contrast to cases involving "suspicion of hazard", there is no doubt here that a potentially harmful contaminant is present. The crucial question is the exposure. There can only be a health risk if receptors, i.e. people, come into contact with the contaminant. The risk also depends on the details of exposure, for example, how much of a pollutant was present, how often each individual was exposed to it, and by which route. The point here is to quantify the exposure and the associated risk. For this purpose it may be necessary to determine whether there is a threshold of exposure, below which it can be assumed that the contaminant in question does not constitute a hazard at all.

Evidence of damage

The situation is different if there is observable damage. In this case there is an actual health problem, but the cause is unclear. One example would be "disease clusters" observed in the vicinity of an industrial plant; the issue here is whether the cause of the disease can be traced back to the industrial plant. Risk communication in this context must be aimed at clarifying the suspected causes. The goal is to obtain proof of the assumed cause/effect relationship and to try to explain it. This type of situation provides the greatest conflict potential for the company involved.

Occurrence of an accident

The occurrence of an accident is a further distinct type of problem. Examples would be the Three Mile Island nuclear accident (1979); the catastrophic release of methyl isocyanate at Bhopal, India in 1984; the 1986 reactor meltdown in Chernobyl, Ukraine; a rash of oil tanker disasters in the 1990's; or the Concorde air disaster in Paris, France, in 2000. In some cases, the risk develops into a crisis (see Chapter 4). Quite apart from the acute damage that may arise from, for example, explosions or chemical poisoning, there is the additional problem of how to assess and clarify the longer-term risks associated with the emission of hazardous substances. Then there is always the question of blame: who or what caused the accident in the first place?

The five types of risk are associated with different communication topics. In addition, they each possess a different potential for mobilizing public concern and therefore place different requirements on the company's risk communication (see Table 6).

Type of risk	Key communication topics
• Suspicion of hazard	➢ Risk potential, safety measures taken
• Possibility of an accident	➢ Probability and scale of damage, how to avoid accidents
• Exposure to a pollutant	➢ Impact threshold, standards and limits, precautions and safeguards
• Accident	➢ Effects and emergency response, long-term effects, causes, and accountability
• Tracing damage to a possible risk source	➢ Causality, burden of proof

Table 6: Types of risk and their key communication topics

3.2 Developing procedures for shaping the dialogue

Risk communication must be thoroughly prepared. The steps should include precise identification of: the stakeholders in the issue, their concerns and problems, the possible conflicts and their potential repercussions. Only then can an appropriate process be selected. As trust plays a crucial role here, it is also necessary to examine the level of trust between the main parties at this point.

Identifying the participants and their concerns

First, the stakeholders in the emerging issue must be identified. In most cases this is a relatively simple task, but in the case of larger-scale projects dealing with infrastructure and/or environmental issues, the number of stakeholders may increase rapidly. Nevertheless, whether there are many or few stakeholders, the process and its outcome are only likely to be received favorably if proper consideration is, in effect, to all of them.

Possible stakeholders

- Neighbors
- Consumers and suppliers
- Action groups, environmental and consumer advocates
- General public
- Local government
- Politicians
- Media
- Insurers

Subsequent analysis deals with the various stakeholders' positions and arguments in relation to the specific conflict issue. It is advisable to draw up an inventory not only of the positions and interests, but also of the stakeholders' arguments. This will at least provide an overview. Positions can usually be classified as either "For", "Against" or "Undecided". For the purpose of an overview, the following questions should be considered:

- Is there a “history” or story to the risk?
- How far has the issue escalated?
- What particular sensitivities do the stakeholders have?
- Is the time right for participation in the decision-making process?
- Are the stakeholders really interested in finding a solution?

The approach shown in Table 7 can be used for systematically mapping the information needed on the stakeholders' positions, interests, and arguments.

Analysis of Interests and Conflicts			
Interest groups	**Position on the "risk"**	**Interest**	**Arguments**
Residents			
Local authorities			
Zoning/ planning committees			
Action group(s)			
Media (regional/national)			
...			

Table 7: Outline for analysis of interests and conflicts

Selecting a procedure

In the next step, the degree of participation for the interest groups or the public has to be decided on and a procedure selected for shaping the dialogue.

Criteria for selecting a procedure for shaping the dialogue:

Items to be assessed:

Scope:
How many people need to be reached? Will the major interest groups be reached/ actively involved?

Comprehensibility:
How can the information be brought home to the interest groups in a way that they can understand it?

Fairness:
Are the interest groups given the opportunity to present their viewpoints?

Order:
Has care been taken to ensure that the dialogue can proceed in an orderly fashion and that complex topics can be dealt with appropriately?

Goals:
Can the defined goals (explanation of facts; clearly presenting the assessment criteria; formulation of recommendations; arriving at a consensus) be achieved?

Participants/ interest groups	Possibility of two-way communication	Dates/time schedule	Cost plan	Ancillary effects (impacts of involvement on image, crisis potential, etc.)
Residents				
Local authorities				
Zoning/planning committees				
Action group(s)				
Media (regional/ national)				
...				

Table 8: Identifying options for two-way communication

Resources planning

Organizing the communication process involves dedicating material and human resources. In order to avoid confusion in the chain of command and eliminating long approval sequences, it is advisable to place responsibility for these resources in the hands of a single project coordinator.

3.3 Performing a trust audit

Assessing trust in the company

The following evaluation questions can be used to explore how the company is seen by those groups which were identified as significant in the previous analysis of interests and conflicts. To simplify the process, the questionnaire could also be filled out by the company using the assumed viewpoint of the particular interest group. The results of the previous analyses should provide an adequate picture of the viewpoint of the different interest groups.

How is the company seen from the "outside"?	
Company representatives tell the truth	
Company representatives keep to agreements and arrangements	
Company representatives are reliable negotiation partners	
Company representatives take the general public's interests into account	
Company representatives are honest and open	
Company representatives keep their word	
Company representatives do not deceive other groups	
Company representatives deal fairly with other groups	

Table 9: Appraisal of the company by interest groups

Finding the reasons for strengths/weaknesses in matters of trust

(1) Social accountability

What services/benefits do we provide for:

- our customers
- our employees
- our neighbors, and
- the general public?

(2) Risks

How do we deal with risks:

- What management principles do we follow and how do we implement them?
- Is this "best practice"?
- What incidents/problems have there been in the past?
- Are concerns being, or have they been, expressed? How do we respond to them?

(3) External image

Have there been complaints in the past about:

- accidents
- product defects
- withholding of information
- refusal to engage in dialogue?

Addressing trust problems

Once it exists, distrust is very difficult to overcome. In principle, there are four strategies which can be applied depending on the extent of the distrust.

Strengthening trust in processes:
If the distrust is scattered and not too strong, it is advisable to build up trust in processes by explicitly stating the reasons why they are trustworthy. This could include:

- presentation of the scientific principles of risk assessment as evidence of its trustworthiness
- explaining the bases for implementing risk management as evidence of the company's foresightedness

Transformation into personal trust:
If the distrust lies deeper, it is advisable to give a face to the processes and principles the company practices:

- Who are the people in control of the company? What values do they uphold?
- Who is responsible for environmental protection and risk management?
- Who checks that the planned safeguards are actually implemented?
- On which experts does the company rely?

Calling in trusted persons/institutions:
If serious trust problems are encountered, an attempt must be made to win over persons or institutions who enjoy high public esteem. However, this also requires granting them certain rights.

Stressing participation and involvement:
If all else fails, the company's only option is to substitute monitoring privileges for the lack of trust. Those whose trust is being sought must be given privileges of inspection and a voice in decision-making.

3.4 Core topics of risk communication

Risk communication must be oriented towards the viewpoints and concerns of the addressees. The specific risk must be precisely delineated and the associated key communication topics must be recognized and considered.

This requires not only an analysis of the existing risk type (see chapter 3.1), but also determining whether the risk is already consistently interpreted in a typical pattern by the public (see chapter 1) and, if so, what interpretive pattern (type of story) is involved.

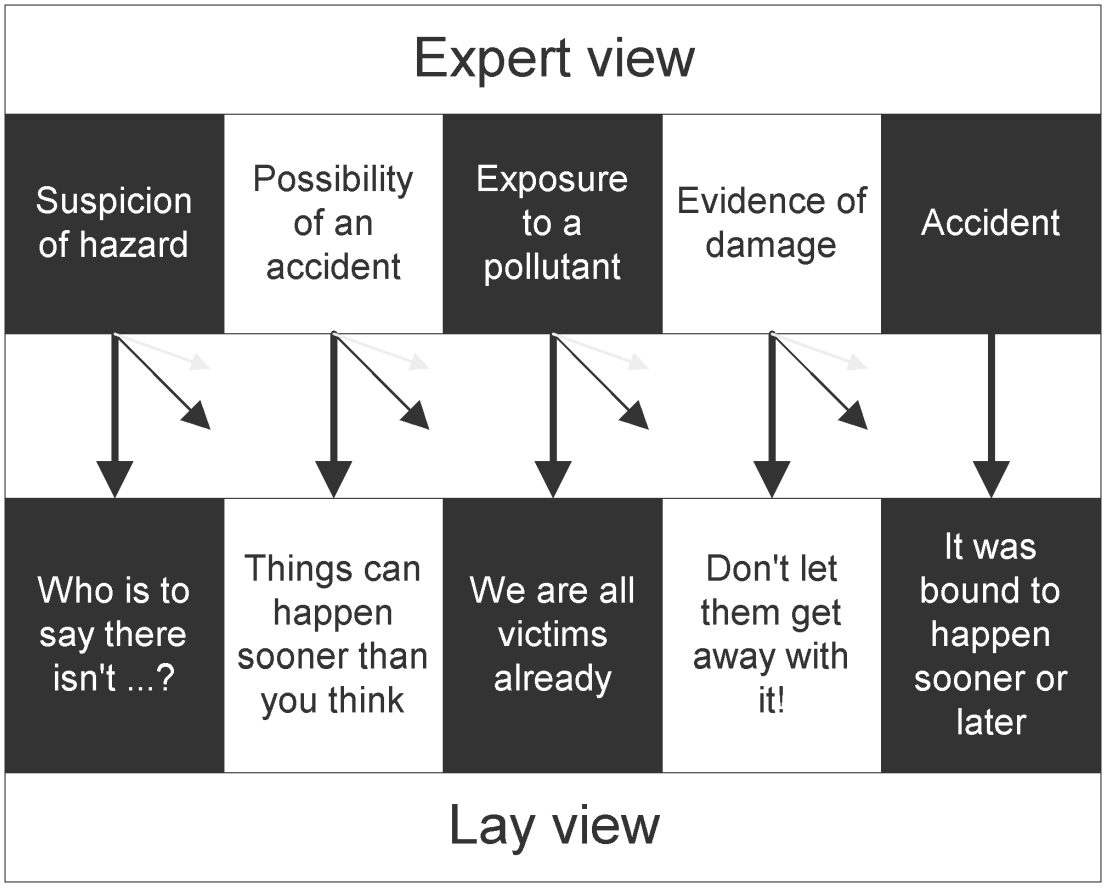

Fig. 10: Risk perspectives of experts and laypersons

Ideally, each of these risk types from the view of the experts would correspond to a layperson's risk perspective as described in chapter 1.2 (see also Fig. 10). So, for example, the "possibility of an accident" type of risk would correspond to the interpretive pattern "Things can happen sooner than you think," and "Exposure to a pollutant" corresponds to "We are all victims already," etc. However, the lay perspective, which emphasizes the social context of the risk, usually tends to intensify the magnitude of the perceived risk. The challenge of risk communication is all the more difficult if the public perceives the risk involved in a different way. To give an example: the risk type “suspicion of hazard” may already be regarded by the

public as proof of contaminant exposure and may trigger the "We are all victims already" or even the "It was bound to happen sooner or later" interpretive response pattern. Obviously risk communication must take into account the prevailing interpretive pattern of risk perception and the layperson's associated beliefs and attitudes.

Grouped according to by the interpretive patterns, the following section focuses on the questions which risk communication must speak to. If these questions go unanswered, all attempts to convey the message of the company's assessment of the risks have little chance of success.

Risk perspectives:

Who is to say there isn't ...?
The suspicion of being exposed to a risk gives rise to diffuse worries and fears. Questions such as the following are often asked:

- What could happen? Can harm be positively ruled out?
- Why have no studies/investigations been carried out to find out whether people or the environment have already been harmed?
- Is information about the pollutant being withheld? If so, why? Is there a conspiracy between industry and the authorities?
- Who is standing up for our interests?

Things can happen sooner than you think
If the basic type of risk involved is the "possibility of an incident", the following questions should be anticipated:

- What could happen?
- How bad would that be?
- Who are the potential victims?
- Is the potential harm tolerable?
- Are there lower-risk alternatives?
- Why is the risk tolerated and imposed on us? Are there good reasons for it?
- Is the risk offset by a benefit, and how is this benefit distributed?

We are all victims already
If there is a widespread assumption that the public has already been exposed to contamination, a mixture of fears and outrage should be anticipated. The company should expect the following questions:

- Who has been exposed? What could happen?
- When was the pollution first discovered?
- How long has the company known about it?
- What has the company done since then? Why has it done nothing yet?
- What safeguards are needed?

Don't let them get away with it!
If ailments and health conditions are attributed to a possible risk source, the following questions will have to be addressed:

- Why are they denying that the ailments originate from this risk source?
- Why are the experts we rely on not listened to?
- Why are the authorities doing nothing?
- Why are the affected people branded as "psychosomatic" cases?

It was bound to happen sooner or later
Following the occurrence of an accident or other incident, the following questions are likely to be voiced:

- What has happened? Who has been harmed?
- How did it happen? Who is responsible?
- Who is to blame?
- Could the accident have been prevented? If so, why weren't safety measures in place?
- What secondary damage can we expect?
- Could the accident occur again?
- What is being done to prevent the accident repeating itself?

3.5 Describing the risks

Once the different risk perspectives have been determined, the next step is to convey the information necessary for understanding and assessing the risk. In this context a distinction is made between qualitative and quantitative description of the risk.

The basic rules for describing the risk situation is as follows: A qualitative description of the risk is particularly important if the assessed risk and the stakeholders' risk perspective differ. For instance, if disagreement exists as to whether there is a risk at all - e.g. in the case of suspicion of hazard - but the public widely assumes that exposure has taken place and they have already become victims. In this case, information is required about the type of risk present and the evidence in support of this reasoning.
A quantitative description of the risks is helpful only after agreement has been reached as to the actual type of risk present.

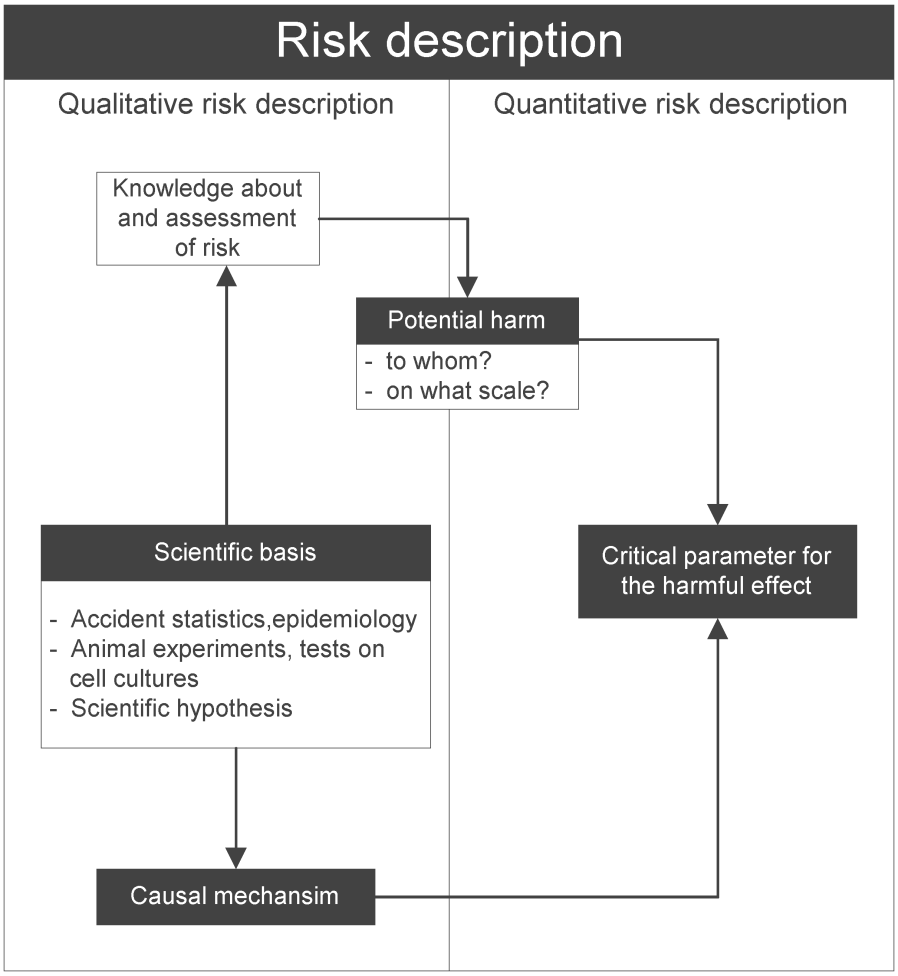

Fig. 11: Qualitative and quantitative risk descriptions

Qualitative description

Qualitative risk descriptions should inform about the type of risk problem and provide the corresponding evidence. Here it is important to establish the scientific basis for characterizing the nature of the risk.

The aim is to bring the prevailing risk perspective and the presumed type of risk into closer alignment. As long as the risk perspective differs significantly from the type of risk identified by experts, it is pointless to try to communicate risk statistics, since they will not be given serious consideration.

There are a number of possible approaches. For the case of exposure to a contaminant, for example, the details of exposure routes or pathways leading to health impairment must be explained. Alternatively, the exposure dose needs to be identified: Who is exposed and to what extent?

In "suspicion of hazard" cases, the discussion about whether there is a risk or not should be conducted using the scientific principles of risk analysis.

The following questions give an idea of the topics that could be of significance in the qualitative risk description:

- How good are the scientific models on which the risk assessment is based?
- How good are the data on which the risk assessment is based?
- To what extent do unconnected studies agree? Do they arrive at different or the same conclusions?
- Can exposure be reliably detected?
- Is there a dose/response relationship, i.e. does the risk grow proportionally larger with higher exposure?
- Can the influence of secondary risk factors be controlled?
- Can procedural and measurement errors be ruled out?
- What support does the risk assessment enjoy in the scientific community?
- What do the subject experts say?

Quantitative description

Quantitative descriptions can apply to distinct aspects of the risk. Basically, information can be provided on the technical source of the risk, on the release or emission, on the exposure or impact, and on the possible consequences.

But without statements of how the risk can be controlled or managed, quantitative parameters tend to create more problems than they solve. Indeed, a quantitative risk assessment should never be communicated without an explanation of the numbers. It should also be noted that risk perception can be influenced by the choice of the units of measurement used.

Risks can be described using distinct aspects. Fig. 12 presents an overview. Four basic approaches to quantitative description are possible:

- Characteristics of the risk-bearing technology
- Characteristics of the release of contaminants
- Characteristics of the exposure (how people come into contact with the contaminants)
- Characteristics of the damage

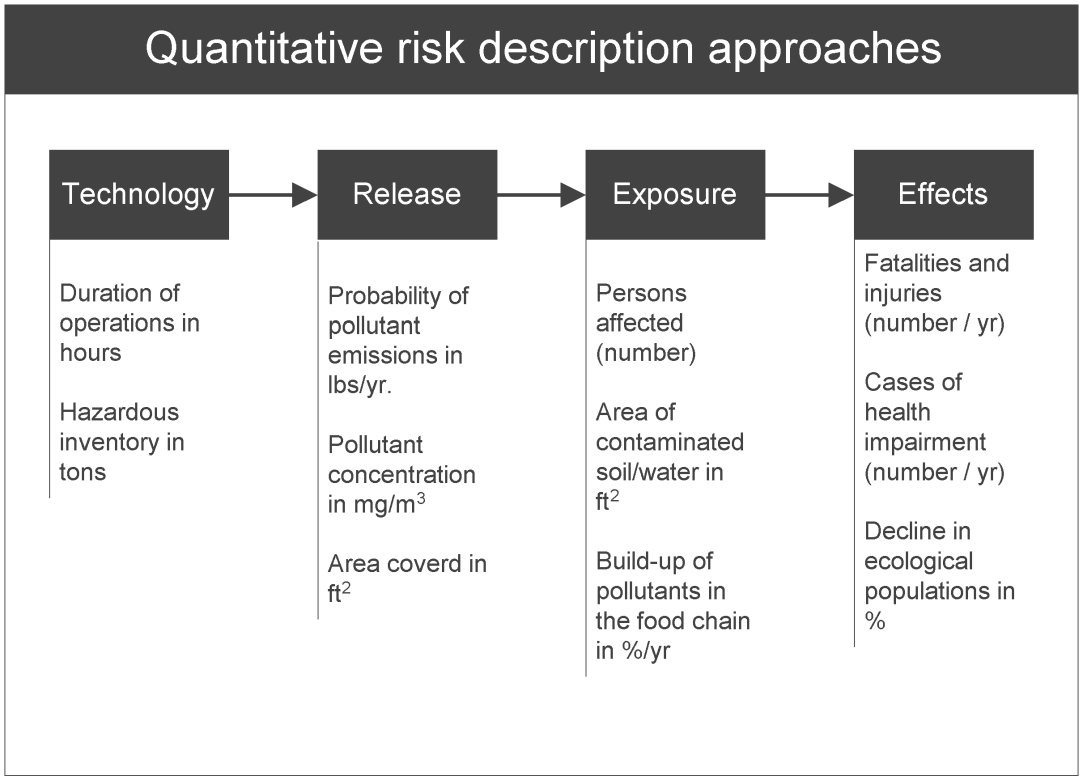

Fig. 12: Quantitative risk description approaches

For example, a technological risk could be described in terms of the number of plants from which the risk emanates. Alternatively, the service life could be taken as the reference parameter (e.g., we have accumulated 2,000 years of operating experience from all plants of this type).

Another approach is to state the probability of contaminants being released as a result of an accident. Risk descriptions can also relate to the contaminants themselves. In this case, data on quantities, concentrations, or activities for chemicals or radiation are usually given. Or the extent of the contamination (what area is affected?) can be quantified. And finally, the persistence - how long the pollutant stays active - can be stated in units of time (e.g. the half-life).

The exposure can be described in terms of the number of people affected. Or in terms of accumulation over time: to what magnitude does the contaminant build up in the human body or in the environment within a defined period of time?

The harmful effects can also be described in various ways. Data can be given on acute or chronic effects, on the frequency of occurrence of a specific health condition, or on the nature of possible health impairment, on effects on future generations, or on environmental damage.

Risk description	**Effect on risk perception**
• **Data on quantities and concentrations**	
Emissions in percent	➢ tends to mitigate
Absolute quantities per year	➢ tends to enhance
• **Probability**	
Lifetime risk	➢ tends to enhance
Mean individual risk per year	➢ tends to mitigate
• **Consequences**	
Fear factor (e.g. cancer)	➢ enhances
High number of persons affected	➢ enhances
No probability data	➢ tends to enhance
• **Reference group**	
Highly exposed persons	➢ enhances
General public	➢ tends to mitigate
• **Triggering event**	
If "man-made"	➢ tends to enhance
If "natural"	➢ tends to mitigate

Table 10: Effects of risk description approach on risk perception

Naturally, the choice of the approach to be employed depends on whether it can describe the risk in question at all, and whether sufficient data is available.

The type of risk description chosen can have an effect on the perception of the magnitude of the risk. Some of these effects are shown in Table 10.

3.6 Comparing risks

Risk comparisons can help to improve the information value of quantitative risk descriptions. Table 11 provides an overview of the various types of risk comparison.

Comparisons can make risks and their adverse effects more readily comprehensible and can help to convey the significance of the risk. However, with risk comparisons particular attention care must be taken to avoid creating suspicions of manipulation. Also, some comparisons may run afoul of the risk perceptions of laypersons. For example, it is meaningless to compare the excess risk arising from a technical facility with the risk of driving a car, because the former is an involuntary risk and the latter a voluntary one.

Aim of risk comparison	**Procedure**
• Confidence in risk assessment	➢ Compare several different independent assessments
• Comparison of risk to improve visualization	➢ Give examples of low probabilities (distances, quantities, volumes)
• Comparison to illustrate the magnitude of the hazard	➢ Compare with official limits or standards
• Comparison to illustrate relative significance	➢ Compare with risks where actions to reduce the risk is called for. Compare with other risk sources that have the same effect levels.

Table 11: Comparing risks

Using risk comparisons that contrast man-made technical or environmental risks with "natural" risks, as is frequently done in the literature, again meets with little public approval. Pointing out that, on average, people absorb significantly more natural than synthetic pesticides does not improve the latter's acceptability. Unfortunately, no adequate empirical studies have been

conducted to date which could provide the experts with clear guidance on how to choose the risks to be used in comparisons.

Questions for the choice of risk comparisons:

- In what ways are the risks that are being compared similar to each other? And in what ways are they not?
- What is the function of the risk comparison?
- Are the comparisons based on risk data whose scientific basis is comparable?

Hints for using risk comparisons:

- are useful only if there is no distrust
- are appropriate only if they are not used as arguments supporting the acceptance of any given risk
- should be tested in advance (how is the comparison understood?)
- should never be the core message.

Highlights of Chapter 3

1. On the one hand, risk communication must be geared towards the questions that are posed in the risk debate. On the other, however, it must also convey the underlying information and knowledge necessary for understanding the risks.

2. The first step in building risk communication is to categorize the risk: What type of risk does the communication have to address?

3. In the second step, a suitable framework of two-way communication must be established.

4. The third step concerns building a relationship of trust.

5. The fourth step involves taking into account the public's risk perspectives in defining the topics to be communicated.

6. The fifth step is concerned with bringing the assessed risk and the risk perspective into alignment. A qualitative risk description approach serves this purpose best.

7. In the sixth step, suitable indicators and risk comparisons have to be chosen for the quantitative risk description.

<table>
<tr><th rowspan="2">Type of risk</th><th colspan="3">Building blocks of risk communication</th></tr>
<tr><th>Trust</th><th>Factual explanation</th><th>Two-way communication</th></tr>
<tr><td>Suspicion of hazard</td><td rowspan="5">• Openness, fairness, transparency, and completeness of information
• Prompt response
• Call in trustworthy persons</td><td>• Scientific evidence for risk assessment
• Uncertainty of risk assessment</td><td rowspan="5">• Information
• Dialogue
• Participation</td></tr>
<tr><td>Possibility of an accident</td><td>• Accident probability
• Extent of possible damage</td></tr>
<tr><td>Exposure to a pollutant</td><td>• Exposure
• Threshold for damage
• Regulatory values</td></tr>
<tr><td>Accident</td><td>• Evidence of damage
• Appropriate response
• Probability of subsequent damage</td></tr>
<tr><td>Evidence of damage</td><td>• Causality
• Cause/effect model</td></tr>
</table>

Table 12: Types of risk and approaches to risk communication

4, Communication in a crisis

4.1 The building blocks of crisis communication
4.2 Communication before a crisis occurs
4.3 Crisis communication in the critical phase
4.4 Crisis communication in the post-crisis phase

Despite taking all possible preparations - including preventive risk communication - crises that may harm the company cannot be ruled out.

It is therefore important to be prepared for such crises, and to have a crisis plan ready for dealing with them. However even the best plan is useless if it is just filed away and forgotten. Dealing with crises is something that has to be practiced.

It should also be noted that a crisis can persist and can even develop into a permanent problem. To avoid this, communication in the post-crisis phase is important.

4.1 The building blocks of crisis communication

Crisis management is the management of the causes of crises and crisis events. It comprises actions in the lead-up phase, the critical phase, and the post-crisis phase. Here, too, communication is one of the principal management functions.

A "crisis" is seen here as a loss of control over business processes because of public reactions to the organization. A company's earning capacity or competitiveness can be severely impaired as a result.

Crisis management tasks:

- Recognizing potential causes of crises. What can be seen ahead?
- Envisioning conceivable worst-case scenarios: What could happen if ...?
- Harmonizing crisis plans. What preparations can be made to cope with a crisis if it comes?
- Actions in the event of a crisis. What has to be done? What results have to be achieved in what time?
- Regaining control. How can the company win back the initiative? How can the company safeguard its business opportunities?
- Learning from the crisis. How effective was the crisis management? What improvements can be made?

What matters in crisis communication

In the event of a crisis, the important thing is to ascertain the facts quickly and to determine who will be in charge, in order to minimize adverse repercussions for the company and to ensure that the crisis does not become chronic.

Essential steps in any crisis management are:

- to draw up a crisis management plan
- to put together a crisis team
- to set up a crisis center with the logistic and technical resources necessary for coping with crises
- to stage rehearsals and simulations to practice crisis management procedures and techniques.

The crisis management plan must specify all the actions and coordinating measures necessary to:

- rapidly alert the crisis team
- define the duties and responsibilities of the members of the crisis team
- describe the individual tasks in detail, define a time schedule, and set quality standards for performance of the tasks.

The crisis team should include:

- a crisis spokesman, who represents the company in public
- an expert on the subject, who assesses scientific and technical questions
- a legal expert, who advises on legal aspects
- a PR expert, who is responsible for monitoring media coverage and for developing a strategy for dealing with the media.

The composition of the crisis team will vary depending on the type of crisis and the size of the company. It should preferably include members of top management. In smaller businesses, the crisis team will generally consist only of the managing director and - if available - a technical expert. It may be useful in this case to call in outside assistance.

The crisis management center is the control center for the duration of the crisis. Depending on the type and severity of the crisis, it may be set up either at the company headquarters or at the site of the crisis. The equipment required for the crisis center includes:

- telephones, mobile phones, fax machines, and pagers
- video recorders including playback/copying equipment
- video conferencing system
- dictaphones and voice recording equipment
- PCs with database and intranet connections
- poster boards and flip charts

Rooms should also be provided for press conferences and interviews.

Crisis training may consist of strategy exercises, rehearsals, or crisis simulations. The aim of the training is to teach better teamwork, the ability to respond quickly to different challenges, and to react correctly under stress. Crisis training events should be held once a year. Even small and medium-sized businesses can stage such crisis drills without great difficulty.

4.2 Communication before a crisis occurs

Aims:
The aim is to prevent the occurrence of crises, and to improve the ability to react quickly and effectively if a crisis does nevertheless arise.

Crisis prevention is largely covered by the basic steps of risk communication already described. However, the various aspects are again discussed in the following section - from the specific vantage point of crisis communication.

Tasks:
The tasks to be performed are as follows:

- planning resources and personnel
- assignment of responsibilities for crisis management
- identification of potential crises
- evaluation and prioritization of potential crises
- monitoring of potential crisis development
- development of preventive communication strategies in the form of language rules
- instructions on how to act in important communication situations
- communication training for employees

What	Who	Responsible
• Resources planning • Crisis management center		
• Personnel planning • Crisis team spokesman		
• Early warning of crisis		
• Communications and organizational planning • Alarm chain • Internal communication • External communication		
• Training and practice • Emergency drills • Communication exercises • Media training		

Table 13: Crisis communication planning

Identification of crisis potentials

This analysis of possible crises naturally links back to the planning and development of risk communication. It overlaps to some extent with the analysis of the company's potential risks, the risk sensitivity of the company's environment, and the risk culture within the company (see chapter 1.4).

Crises can evolve from extremely varied origins. The following are just a few examples:

Examples of crisis triggers:

- Accidents involving injuries, fatalities, or serious environmental impacts
- Cancer clusters in the neighborhood of factories and plants
- Spectacular reports about individual cases (e.g. of cancer) on TV
- New scientific studies verifying a hazard potential
- Product recalls
- Acts of violence, terrorism, or sabotage
- Stringent new regulations (emission standards) in other countries that lead to urgent demands in the domestic media
- National campaigns and action groups with high interest value for the media (e.g. sit-ins etc.)
- High-profile court cases, large compensation claims

It is always advisable to draw up a company-specific crisis profile and to define the events that could develop into crises. For practical reasons, not more than 5 to 7 of the most significant potential crises should be followed up.

4.3 Crisis communication in the critical phase

Even when all possible preventive measures have been taken, crises may still occur. It is then important to react quickly and appropriately, in spite of the stress that is bound to be present.

Aims:
The priorities following the occurrence of a crisis event are:
- to enable alarm to be given quickly
- to provide for prompt reactions
- to set up clear and factually accurate communication

Tasks:
The following actions must be taken if a crisis event has occurred:
- assess the severity of the event
- alert the crisis team
- take stock of the situation: analyze the symptoms and development of the crisis
- mitigate the adverse impact of the crisis on human health, continued ability to deliver, company image, jobs, and the company's business capacity
- define the information to be communicated and its target groups, and provide it rapidly
- monitor and document the course of the crisis

The priority must be to analyze the crisis event. Answers to the following questions must be gathered and processed for communication:

What has happened?
- When and where?
- What are the causes of the crisis event?
- Were there any advance signs of the event and how long has the company been aware of them?

What are the consequences?
- What harm has been caused (to health, the environment, property)?

What has the company done so far to contain the crisis and what does it intend to do?
- immediate action taken (warnings given, immediate counter-measures taken, and assistance provided)
- intended actions

These actions may be of a technical, organizational, or communications nature. Working through a checklist of actions to be taken can help to ensure that nothing is overlooked.

Duties within the first twenty minutes	
20 min.	• Assess the incoming information • Decide whether a crisis alarm should be issued • If necessary, trigger the alarm chain • Proceed to the crisis center • Set up a communications link with contingency management on site, if necessary
Duties within the first hour	
1 hr.	• Make a more detailed assessment of the situation • Issue information and instructions for the public, if necessary • Provide information to authorities • Provide in-house information to employees
Duties within the first two hours	
2 hr.	• Set up a hotline for the media • Set up a hotline for those potentially affected • Provide the press with information
Duties within the first twenty four hours	
24 hr.	• Prepare the spokesperson for press conferences • Have information ready for the media • Hold a press conference • Make arrangements for assisting those affected

Table 14: Essential tasks in crisis communication

4.4 Crisis communication in the post-crisis phase

Aims:
The most important thing in the post-crisis phase is to prevent new or further potential crises from developing. It is essential to prevent the crisis from becoming chronic. In addition, it is important to learn lessons from any crisis that has occurred. The opportunity should be taken to improve crisis management and communication on the basis of the experience gained.

Tasks:
- Aftercare of victims and their dependants
- Undertake internal analysis of the causes and circumstances of the crisis and the effectiveness of communication
- Make the necessary improvements in terms of personnel, organization, location, production, products, and implementation of improvements
- Pass on information about improvements made

To permit measures to mitigate the consequences of the crisis to be taken promptly, it is essential to perform a detailed analysis of the impacts in terms of:
- loss of trust
- damage to plant
- additional expenditure and liabilities
- loss of earnings
- loss of market share
- weakening of competitive position

Highlights of Chapter 4

1. Crisis communication is risk communication under especially difficult conditions, where the harm has already been done.

2. The building blocks of crisis management are:
   - the crisis management plan
   - the crisis team
   - the crisis center
   - crisis training.

   Only if all these elements are present will the preparation for crises be effective.

3. Crisis communication requires the setting up of an early warning system to identify potential crises ahead of time. The risk communication audit can also be applied here.

4. The routine tasks of crisis communication in the acute phase can be guided by a pre-defined plan. However, it is always necessary to be able to respond quickly and flexibly as well.

5. In the post-crisis phase, efforts must be directed towards ensuring that the company suffers no permanent harm as a result of the crisis.

5. Organizing risk communication within the company

5.1 Strategic framework for corporate risk communication

5.2 Ways of organizing risk communication within the company

5.3 Problems of implementing risk communication within the company

Risk communication is usually a matter for top-level management. To attract the attention it deserves, it must be embedded in the company's strategic planning. If this does not happen, risk communication will be little more than an empty slogan.

Above all this implies that risk communication has to be taken seriously by company management, that the relevant responsibilities have to be clearly assigned, and that risk communication has to be integrated into the company's existing forms of communication.

In addition, it is important to recognize and overcome barriers to implementation that may arise from internal company "micro-politics".

5.1 Strategic framework of corporate risk communication

A forward-looking corporate risk policy must fulfill three conditions:

- An essential prerequisite for successful risk communication is a thorough knowledge of the risks that may arise from the company's operations. Before appropriate communication strategies can be developed, these risks have to be identified, assessed, and managed.

- Business must evolve a new culture of communicating with their social environment. The cornerstone of this culture is the early identification of the risk issues relevant to the company, and the active and dialogue-oriented shaping of relationships with the various interest and action groups. Here, it is important for the company to display social and socio-political responsibility.

- Effective in-house communication on risks is a further prerequisite for successful communication with the stakeholders on the subject of risks.

5.2. Ways of organizing risk communication

There are different ways of organizing risk communication within the company. Depending on the size of the company and the urgency of the existing problems, four models can be distinguished.

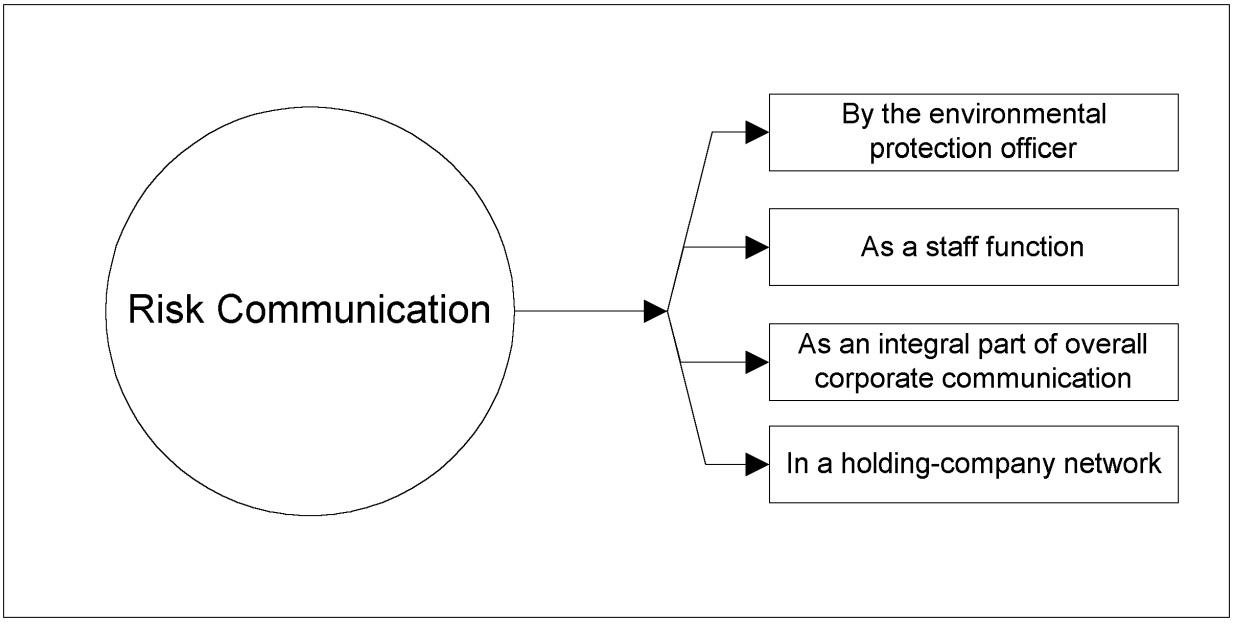

Fig. 13: Options for implementing risk communication

Model 1:

Risk communication as a separate function performed by a safety or environmental protection officer

A simple organizational solution is to delegate the responsibility for risk communication to the person who is already responsible for safety or environmental issues within the company (e.g. the environmental protection officer). This is a model that might be suitable for smaller or medium-sized businesses with a low risk of potential crises. Here, the officer's technical duties related to environmental and safety issues are extended to the communication tasks to be performed in close coordination with company management.

Advantages	**Disadvantages**
• No additional resources • Direct access to company management	• Often deficits in risk communication knowledge

Example:

An example of this kind of approach might be a small paint shop in which the safety officer and the company management have jointly developed an action and communication plan for providing information to the authorities and residents in the neighborhood (e.g. if odors from the paint shop could cause a nuisance).

Model 2:

Risk communication as a staff function

A slightly more complex organizational approach is found in medium-sized and large businesses with a limited range of possible topics for risk communication. These may include, for instance, companies that manufacture and market potentially risky products, but do not have any local production plant risks. In such cases, a small staff unit of a few employees is typically formed, reporting to company management, corporate communications, or central research. This unit performs cross-cutting and coordination duties relating to possible risk topics. These duties could include:

- monitoring and participating in discussions by expert bodies (e.g. professional and vocational associations)
- coordinating and communicating information between technical departments and the corporate communications organization
- following the scientific discussion about risk issues
- providing expert advice for the corporate communications organization and company management

Advantages	**Disadvantages**
• Expert and professional treatment of risk communication issues possible	• Staff unit may be rather isolated in the company as a whole • Limited effectiveness

Example:

An example of this kind of organizational model is a mobile phone company which sets up a special staff unit to deal with questions about the possible health-related effects of electromagnetic fields emitted by mobile phones.

Model 3:

Risk communication as an integral part of overall corporate communication

Large businesses with pronounced strategic risks and high susceptibility to crises (such as international chemical concerns) face sophisticated demands on all communication functions. They therefore need to develop a highly diversified, and yet at the same time highly integrated, organizational approach. On the one hand, specialization - and thus division of labor - is necessary for dealing with different target groups and to be able to communicate

quickly and appropriately at different technical levels. On the other, a high degree of integration is necessary to ensure that different parts of the company act in a uniform and consistent fashion.

One organizational model that fulfils both these requirements is a corporate communications structure that operates from company headquarters and is responsible for steering the decentralized communication functions. To be successful, this model depends on strong communicative networking between headquarters and the divisions. The necessary functional specialization can be achieved by setting up, for example, the following departments or roles within the corporate communications organization:

- basic communication policy issues
- communication with employees
- press relations and PR
- image and corporate advertising
- investor relations

An integrated corporate communications organization of this kind is generally backed up by further central services, such as economic and market analysis, a marketing department, or a publications service.

Advantages	**Disadvantages**
• Diversified, anticipatory and audience-targeted communications approach possible	• High personnel effort and expenditure on resources • Possible slow response to critical events in decentralized divisions

Example:
An example of this type of organization is a car manufacturer with a headquarters-based corporate communications organization that performs and coordinates most communication functions centrally.

Model 4:
Risk communication in a holding-company network
Some businesses have taken the step from a corporate group to a holding company structure in order to be able to act more flexibly, to be more responsive to their markets, and to enhance their economic transparency. As a rule, the management of the holding company generally withdraws from operative responsibility to concentrate on strategic portfolio planning, corporate development and defining an overall framework for operations. Responsibility for everyday business rests with the independent group companies. This means that, in a holding company structure, the group companies are responsible for risk communication. If, however, a crisis escalates to affect the holding as a whole, the holding

company must itself communicate. Then the holding company must attempt, by issuing guidelines and offering support as early as possible, to establish a uniform (minimum) standard of risk communication for the group as a whole. This must essentially be achieved on a voluntary basis, since the holding company has limited means for exercising a direct influence on the group companies' actions.

Advantages	**Disadvantages**
• Decentralized, highly responsive and locally focused risk communication	• The holding company's strategic authority could be undermined or circumvented by the group companies • Company could have a different corporate image locally

5.3 Problems of implementing risk communication within the company

The risk communication concepts and instruments described so far are ideal cases. Even if they are theoretically known and understood within the company, this is not in itself a sufficient basis for successful risk communication.

Companies - like any other organization - always lag behind their ideal goals and strategic plans, and to a greater or lesser extent, when it comes to implementing them. For this reason, it is important to remember, when implementing risk communication within the company, that organizational obstacles may reduce the effectiveness or efficiency of risk communication measures, or even prevent them working entirely. In other words: it is not sufficient to do the right thing, the right thing also has to be done in the right way.

Many of these obstacles to implementing risk communication within the company can be traced back to phenomena that are referred to in recent organizations theory as "micro-politics". The key elements here are inconsistencies within the company that have their origins in differences of interests. Joint, pro-active, timely and coordinated actions can be successful taken only if the interests of all participants are duly considered.

Analyzing the specific company’s organization can discover which obstacles to the implementation of risk communication exist in any given case.

Of the many stumbling blocks to implementing risk communication encountered in practice, some common problems are discussed below (see also Fig. 14).

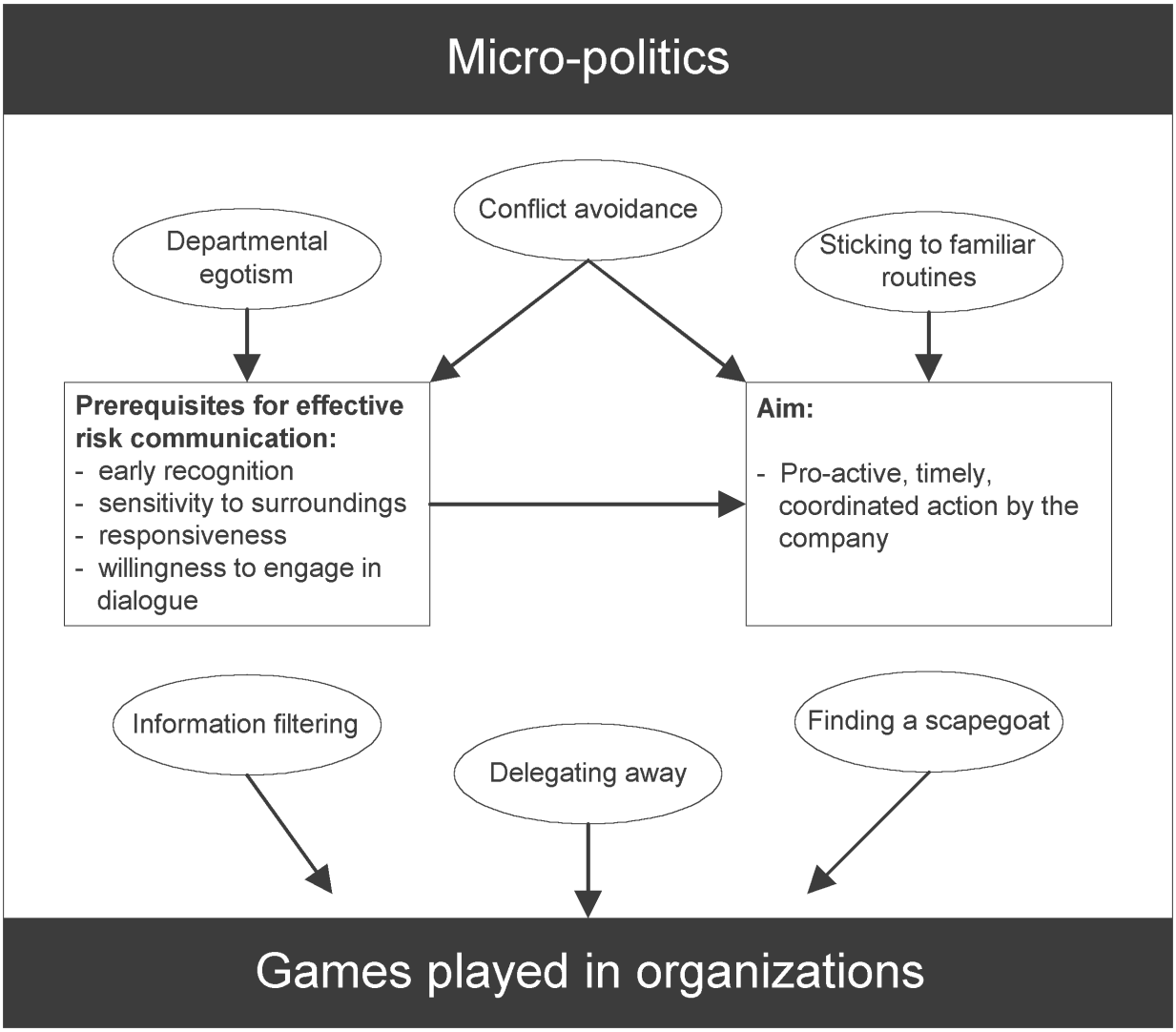

Fig. 14: Obstacles to implementing risk communication within the company

Departmental egotism and rivalries

Retrospective analysis of numerous actual cases of risk communication shows that, despite having professional risk communication programs and instruments and good intentions, many businesses were unable to realize their full potential for risk communication - because internal organizational rivalries and wrangles impeded or prevented prompt, coordinated responses appropriate to the given situation.

A classic example of this was the corporate crisis experienced by the Shell petroleum group over its plans to sink the Brent Spar oil rig. Since the oil crises of the seventies, this company had gained a reputation as a leading example of the early strategic identification of opportunities and risks (thanks in part to the "Scenario Planning Unit" based at the group

headquarters). In the Brent Spar case, the company ran into trouble not due to lack of foresight, but because of rivalries and communication problems arising out of differences in corporate culture between the British and German companies. During the early phase, London headquarters set the tone - with the consequence, now well known, of escalating the crisis into a major one for the entire group.

A further common example of this type of internal organizational conflict is the chronic distrust between staff and line departments. Line managers frequently complain that staff departments do not understand the details of their day-to-day business. Conversely, staff department representatives complain about a lack of acceptance and influence among line managers.

There are no magic solutions to such internal organizational conflicts. However, experience from companies which have successfully overcome crises shows that this was achieved by close collaboration, a high degree of trust, and intensive communication between all levels. Crisis management has to be coordinated, both at headquarters and in the local divisions, at the staff level and at the line level.

Information filtering and conflict avoidance

Especially in large, hierarchical businesses with pronounced functional specialization, it is difficult to provide fast, direct information about risks and crises. Since risk communication is frequently concerned with unpopular topics, important advantages can be lost if organizational units or individuals are afraid of being the herald of critical messages (true to the old saying, "The first bearer of bad news is beheaded, the second is promoted"). The ambiguity and uncertainty of many crises also pose high risks for whoever has to decide if there really has been an accident or if a hazard really does exist. No-one wants to be in the position of having triggered a costly false alarm.

The cause of such information filtering is frequently a tendency to avoid conflicts. Studies carried out in businesses indicate that many managers are either unwilling or unable to tackle or take on conflicts with their colleagues or employees. In practice, this means that managers frequently shirk reporting the true situation and also tend to keep quiet about the potential for future crises. For example, analysis of the Challenger space shuttle catastrophe showed that this attitude of "conflict avoidance" played a major role at NASA.

The following are possible solutions to such problems of in-house information exchange:

- sensitization of employees to the problems
- allowing those responsible for risk communication relatively wide freedom of decision without fear of sanctions (e.g. by having them report directly to the company/factory management)
- bringing in external advisers as a "neutral" authority.

Sticking to familiar routines

Risk communication is a function that thrives on continuous adaptation to situation-specific requirements arising from the corporate environment, and which therefore needs to be constantly updated. Nevertheless, it is indispensable for this function to be integrated into the organization's routines by means of specific programs and instruments. The constant danger with routines, however, is that work procedures and habits tend to be perpetuated even after the original aim behind them has ceased to exist. The general rule that routines must be critically reviewed and revised at regular intervals applies especially strongly to risk communication. The company can, for example, carry out a critical examination of its own established routines for (risk) communication as part of an audit (see chapter 1.4).

Finding a scapegoat

Businesses that unexpectedly find themselves in a crisis situation tend to deny responsibility for the crisis or the "upset", and try to convince themselves and others that basically nothing needs to be changed. For this purpose, they often look for a culprit to relieve the organization of its burden of responsibility.

One example of this was the conduct of the Union Carbide chemical company, which initially tried to blame the Bhopal poison gas catastrophe in India on "sabotage".

Putting all the responsibility or blame on an individual (for instance the captain of the Exxon Valdez oil tanker, which triggered an environmental catastrophe after running aground in Alaska in 1989), or on a technical defect, is another of the games played in organizations with which businesses attempt to ward off complex questions of accountability, and to avoid the need for a critical examination of their own safety procedures and precautions.

The following are possible ways of correcting these "buck-passing" behavior patterns:

- defer dealing with questions of blame until the results of detailed investigations into the causes of the crisis have been uncovered and attested to by independent experts
- adopt a general skepticism towards mono-causal explanations. Accidents always involve a combination of several factors (human operators and technology, networked systems, etc.).

Delegating responsibility for communication away to specialists

Many top managers think of risk communication as a bothersome, unpleasant chore. It demands fundamental attitudes and abilities that go against the grain of managers who prefer to make impressive announcements of positive business results, and who fear not being "in control". For example, the abilities demanded include:

- listening to environmentalist critics of industry and taking their arguments seriously ("ability to engage in dialogue")
- explaining to the public in TV interviews how the accident came about, etc. ("openness and transparency")

For this reason, where risk communication is concerned, many top managers succumb - usually after having ignored some initial early warning signals such as minor company crises - to the temptation of making some changes in their company, without changing anything significant. One option which often reflects this approach to managing problems is to set up a staff unit dedicated specifically to risk and crisis communication. This can be "sold" inside and outside the company as a forward-looking and image-boosting innovation, but because this unit is not effectively integrated into the organization and possibly lacks any real support by top management, the best that can be hoped for is that it does not itself cause any "damage", and therefore remains ineffectual. When the next company crisis comes along, this unit can be then be blamed for having failed to do its job properly, and the obvious consequences can be drawn.

So the essential ingredients for the implementation of risk communication within the company are, first, top management's unqualified identification with its principles. Second, top management must set a good example of a new communication culture, in particular, by endorsing broad and in-depth integration of risk communication in the company’s business practices.

Highlights of Chapter 5

1. Depending on the size of the company and the urgency of the existing problems, there are different ways of organizing risk communication within the company.

2. The prerequisite for successful corporate risk communication is a thorough knowledge of the risks that associated with the company's operations, and how to deal with them properly.

3. Risk communication must be embedded into the established communication forms and structures. In-house communication is of particular significance.

4. When implementing risk communication within the company, the in-house, "micro-political" obstacles that could impede effective risk communication must be taken into account, and ways to eliminate these problems worked out.

6. The future of risk communication: a look ahead

The risk profile of a company changes over time. Old risk issues lose their significance, new ones take their place. Risk communication needs to adapt to this dynamic change. It is important to ask what successes the company has achieved with its approach to risk communication, and, conversely, what deficits have been detected. But beyond that, it is also vital to be able to recognize new risk issues and to find ways in which the company can adapt.

Considering the diversity of situations facing large and small businesses as well as the differences in the various industrial sectors, global statements are perhaps presumptuous. Nevertheless, there are indications of certain developmental trends.

The future of risk communication: a look ahead

In the long run, risk communication for companies must go beyond the communication of production- and product-related risks. However, technological, economic, and social risks are becoming so complex that new avenues of communication have to be developed and implemented.

Companies are most experienced in dealing with risks relating to their industrial plants. Many companies have established strong relationships with their neighbors, representatives and the regulatory authorities, and offer opportunities for dialogue such as publicly accessible hotlines, brochures, open days, or discussion groups. As a result, production-related risk issues exhibit the lowest complexity and thus demand the least amount of outside consulting.

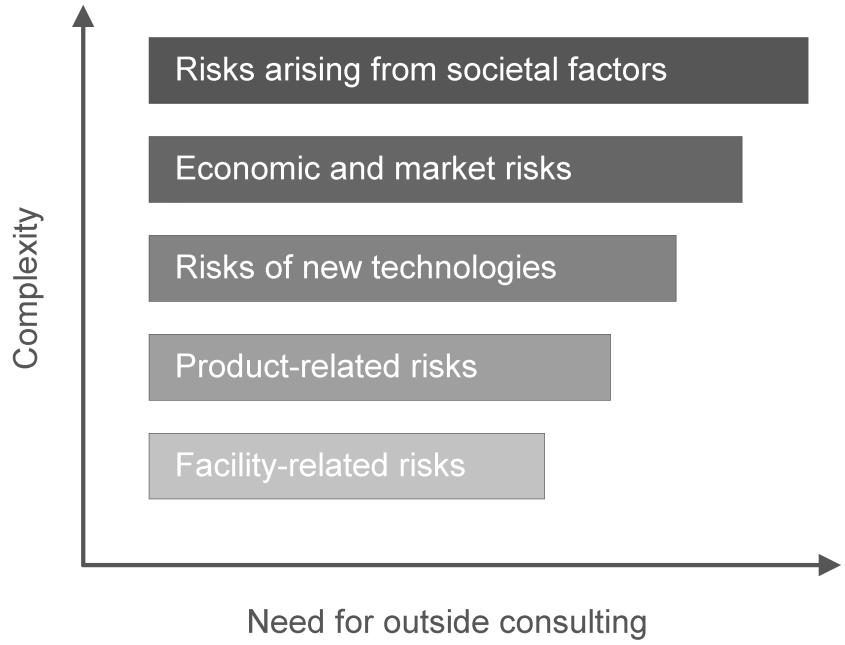

Fig. 15: Rating the company's need for advice

Depending on the line of business, companies may have gained considerable experience in dealing with product-related risks. However, both the vast diversity of products and the range of tasks they are expected to fulfil mean that product-related risks are much more complex than plant-related risks. In addition, political parties are increasingly discovering product-related issues as instruments for achieving their consumer protection, environmental protection, and resource conservation goals. Therefore, demands on product design are increasing, which in turn raises the company's need for expert consulting.

Technology-related risks represent a major risk communication challenge, especially for companies dealing with the new baseline technologies such as biotechnology and genetic engineering. This is particularly true if these technologies have far-reaching societal and economic implications and generate new potential risks. Risk communication must go beyond merely presenting the opportunities and risks of the technology concerned, but must also consider the fundamental principles and value systems that are affected. The debate on the fundamental changes brought about by these new technologies in our daily life, at the workplace, and in how we cope with disease and life in general must be held at the societal level. Political representatives, government, and society's leaders must shoulder the lion's share of responsibility here. But business organizations, too, must participate in and encourage the discussion. After all, companies represent the developers, the promoters, and the beneficiaries of new technologies.

Economic and market risks are even more complex and involve a greater need for outside consulting. Market and consumer preferences change much more rapidly than regulations and organizations. These economic and market risks are understood only marginally. The trade conflicts between the EU and USA are an example of this. As yet, there are no established solutions that encompass not only the legal aspects, but also the political and societal expectations of markets and trade relations. To thrive and survive, companies must exert more effort than ever to keep up with the rapidly changing expectations on the development and marketing of their products. They must take into account not only the technical features of their products but also "soft factors" such as the company's reputation or image.

In the case of societal risks, the complexity and need for consulting is higher still. There is as yet no guidance for dealing with societal risks. Regardless of the absence of experience to draw upon, expectations are increasing that companies share in the responsibility for societal decision processes. This applies equally to issues at the regional level as well as to international networks and the challenges of globalization, which cannot be dealt with adequately by conventional nation-state politics.

Many of the pressing topics and potential for crises outlined here still await companies' attention. The progression from a reactive standpoint to an active participation in shaping the issues requires that the company identifies the relevant topics and risks, clearly determines its own position, and develops strategic plans for communication. Facing the challenge of risk

communication in a conscientious and proactive way can benefit the company in many respects - far beyond the immediate crisis.

Glossary

Acceptability
Assessing the acceptability of a risk involves making a normative judgement about whether that risk can be tolerated, i.e. a pronouncement as to whether and under what conditions a risk is to be classified as reasonable. This statement is always based on subjective evaluations, even if formal decision processes are used. The acceptability of a risk depends not only on the probability of an occurrence and the scale of the harm it could cause but also, and in particular, on the individual, social, and politico-cultural background conditions. Any assessment of acceptability should distinguish at least three aspects:

- the normative aspect - whether the risk should be accepted at all;
- the efficiency aspect - to what extent should societal resources be dedicated to reducing the risk; and
- the operative aspect - what instruments should be used to reduce, control, or regulate risks.

Cancer cluster
An unusually high incidence of cancer within a given area.

Cognitive certainty
See Probability of occurrence

Crisis
A crisis is a total or partial loss of control over business processes which - as a result of public responses - can seriously and permanently impair the company's earning capacity or competitiveness.

Discourse
Discourse is a form of two-way communication aimed at understanding each other’s position. Arguments are examined for validity, according to set rules and without regard to person or status, with a view to shared decision-making.

Exposure
Quantities or doses of a substance to which a receptor is subjected.

Harm
Undesired consequences of an action or event. It can apply equally to people, the environment, or property. For instance, the German (DIN VDE 3100-2) standard states that, "Harm is any detriment caused by a violation of a legal interest, as a result of a certain technical process or state".

Hazard
A process, circumstance, or condition, which could cause harm if certain potential future events occur.

Objective risk
An objective risk is determined by retrospective studies of harmful outcomes, usually as frequency distributions of harm resulting from specific hazards. Actuarial tables of people killed per car mile driven in a specific time period for a given automobile brand are typical examples. Because of the uncertainty of future events, a predicted risk can never be more than an approximation of an objective hazard.

Opportunity
Opportunity refers to the possibility that a beneficial outcome may occur. Whether the outcome of an uncertain event is regarded as a risk or an opportunity depends not on the probability of its occurrence but on the individual's personal evaluation of the consequences of the event, i.e. whether he sees these as mainly negative (risk) or mainly positive (opportunity). **See Risk.**

Probability of occurrence
The probability of occurrence designates the likelihood of any given risk event occurring, or any given harm being suffered. The probability of occurrence is bounded by ignorance or unawareness at one end, and cognitive certainty at the other. Cognitive certainty describes the state in which one feels sure that a given event is going to occur, e.g. one's belief in the recurrence of given events such as sunset, the start of spring or the tides.

Risk
The term risk refers to the possibility of the occurrence of harm. Whether an uncertain event is regarded as a risk or an opportunity depends not on the probability of its occurrence but on the individual's personal evaluation of the consequences of the event, i.e. whether he sees these as mainly negative (risk) or mainly positive (opportunity). See Opportunity.

Risk analysis
A risk analysis is an attempt using scientific methods to determine qualitatively and, if possible, quantitatively, but at any rate as closely as possible to reality, the probability of occurrence of specific cases of harm or the probability function of harmful events. Ideally, a risk analysis should come as near as possible to the objective risk.

Risk assessment
A risk assessment is the identification, quantification, and evaluation of risks. Its aim is to arrive at the best prognosis possible, using state of the art methods of the probability of occurrence and the seriousness of harm.

Risk communication
Risk communication is a targeted exchange of information about the possible effects of events, actions or technologies on human health, the functional capability of ecological systems, or the material or immaterial value of cultural accomplishments. The functions of risk communication can range from improving knowledge about risks (e.g. pharmaceutical products), through

bringing about changes in attitude and conduct (e.g. behavior in an emergency), to resolving conflicts (e.g. about the operation of nuclear power plants). Important elements here are the creation of trust and credibility, the conveying of information and knowledge, and two-way communication.

Risk evaluation
Risk evaluation is the process of judging the acceptability of a risk by rational deliberation, using the findings of risk analysis and the results of risk perception. Ultimately, risk evaluation must involve stakeholders and/or their political representatives or authorities.

Risk management
Risk management means all actions taken to reduce, control, and regulate risks.

Risk perception
Risk perception describes the appraisal of a risk situation on the basis of intuitive judgement, personal experience, and acquired information (e.g. from the media).

Risk perspective
Risk perspective refers to the perception of risks in social contexts. Typical features include an orientation towards the baseline situation, the actions of the characters involved, a build-up in tension that gives character to the event, and a moral maxim or principle.

Risk topic
Risk topics can develop into risk problems for the company (e.g. widespread disapproval of nuclear power). The problem arises from the concerns of societal groups that, if taken up by public opinion, can develop into crises for a company and thus restrict its freedom of action.

Safety
Safety describes a state in which the remaining risk is judged to be acceptable. There is still a possibility, even in a state of safety, that harm could occur. The concept of safety as an absence of hazard (**see Hazard**) is of little practical use in most contexts, since risks exist even if an activity is avoided.

SWOT analysis
The SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) is a management instrument for developing structured response options to deal with external threats and exploit opportunities.

Trust
Trust in the context of risk communication means being able to rely on the competence (knowledge, skills), the fairness (openness, granting of equal opportunities) and the sense of social responsibility (e.g. towards employees, customers, neighbors, the general public) of the communication partners.

Two-way communication
Going beyond one-way communication (from the transmitter to the receiver), two-way communication refers to a variety of methods for obtaining feedback from the addressees of risk communication. These range from granting them opportunities to present their viewpoint, to inviting those concerned to participate actively in the decision-making process.

Uncertainty
Uncertainty means the fundamental inability to make a deterministic prognosis.

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